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AUTHOR Coomber, James; Peet, Howard; Smith, Carl
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ABSTRACT

Intended for teachers of grades K-12, including teachers of at-risk students and English as a Second Language teachers, speech therapists, and special education personnel, as well as general classroom teachers, this book offers a methods course to teach vocabulary. The book presents a course syllabus which includes on-line activities, readings, and written assignments. Sections of the book are: (1) vocabulary background and process; (2) the importance of context; (3) reinforcement; (4) elaboration; and (5) reviewing words via learners creating contexts. The book concludes with a summary which discusses choosing target words for vocabulary study and strengthening the vocabularies of poor readers. Contains 52 references. (CR)

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ED 426 402

TEACHING VOCABULARY: A METHODS COURSE MANUAL

James Coomber, Concordia College—Moorhead, Minnesota

Howard Peet, North Dakota State University

Carl Smith, Indiana University

CS 216 258

U.S. DEPARTMENT OF EDUCATION
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September 1998

Dear Colleague:

Welcome to "Teaching Vocabulary: A Methods Course," a new learning opportunity on the internet for teachers K-12. This course is sponsored by Division of Continuing Education of North Dakota State University. We are glad you have registered for this course and hope you will find it stimulating and enjoyable and, most of all, applicable to your classroom teaching.

This is a new course in several ways—new because it was just produced in 1998 and because it takes advantage of a technology most of us hadn't even heard of ten years ago: the internet. Three of us—Howard Peet of NDSU, Carl Smith of Indiana University and Director of ERIC, and I have developed this course, along with a great deal of production and administrative help from computer expert Elizabeth Smith and her staff at NDSU and by Nancy Olson and Karen Murie of NDSU's Division of Continuing Education. We also want to thank Eugene Reade of ERIC, who helped edit the manual.

I will be your instructor for the course. I am a professor of English and chair of the English Department at Concordia College—Moorhead, Minnesota, where I teach courses in writing and language arts methods. In addition to college teaching, my teaching experience has also included high school English and reading in Wisconsin and North Dakota. For over twenty years I have been teaching extension courses in developmental and remedial reading and in teaching vocabulary at North Dakota State University, Hamline University, University of Calgary, Seattle Pacific University, and Bemidji (Minnesota) State University. Howard Peet and I have co-authored Wordskills, a vocabulary-spelling development program for grades 6-12 published by McDougal-Littell Houghton Mifflin.

As a first-timer in teaching on the "net," I feel like a pioneer. And whether or not this is your first internet course, you might think of yourself as a pioneer, too, for you are among the first to take this course. Especially since this is a new course, Carl, Howard, and I would appreciate any comments or suggestions you might have. Please email me (coomber@cord.edu) or phone (218-299-3813) or write as questions come up or if you want to talk over something about the course.

I look forward to working with you!

Sincerely,

James Coomber

Syllabus

"Teaching Vocabulary"

Instructor:
James E. Coomber, Professor and Chair, Department of English, Concordia College, Moorhead, Minnesota 56562, Office Phone: 219-299-3813, E-mail: coomber@cord.edu

Curriculum Developers:
Howard D. Peet, Emeritus Professor of English, North Dakota State University
Carl B. Smith, Professor of Education and Director of ERIC, Indiana University

Intended Audience:
Teachers grades K-12, including teachers of at-risk students and English as a Second Language and speech and hearing specialists

Text:
Coomber, James E., and Howard D. Peet. Wordskills. Evanston, IL: McDougal-Littell Houghton Mifflin, 1993.
Coomber, James E., Howard D. Peet and Carl B. Smith. Teaching Vocabulary. Fargo, ND: Division of Continuing Education, North Dakota State University, 1998.

Course Objectives:
This course is intended for teachers grades K-12, including ESL language teachers, speech therapists, and special education personnel, as well as general classroom teachers. In this course you will:

1. master effective strategies for teaching and creating materials for reviewing words and other lexical items
2. develop a rationale for choosing target words and commonly-occurring word structures for intensive teaching
3. acquire teaching strategies for helping students develop vocabulary independence, enabling them to determine word meanings on their own
4. become informed about issues in vocabulary teaching and major findings of vocabulary research, with implications for teaching vocabulary
5. understand the importance of relating words to the concepts being taught and to teach words in ways similar to teaching concepts
6. develop strategies that will help learners become truly engaged with words, regarding word study as exciting activity

Credit and Requirements:

Requirements for two graduate credits:

6 internet activities at A-level	6 points
2 written assignments	4 points
total	10 points
reaction paper optional for an additional	2 points

Requirements for three graduate credits:

10 internet activities	10 points
2 written assignments	4 points
1 reaction paper	6 points
total	20 points

COURSE SCHEDULE:
READINGS AND INTERNET ACTIVITIES

PART I: INTRODUCTION & VOCABULARY BACKGROUND AND PROCESS

READINGS: Introduction & Vocabulary Background & Process - Manual pages 10-19

A. Vocabulary background and theory
   1. Words and concepts
   2. Words and our perception of the world

B. Four types of vocabulary—all of which need attention
   1. Listening
   2. Reading
   3. Writing
   4. Speaking

C. Methodologies that facilitate vocabulary-learning: a review of research
   1. Active processing
   2. Reviewing the target word in different contexts
   3. Using several techniques for review rather than only one
   4. Elaborative processing

D. Strategies for vocabulary independence
   1. Context
   2. Word Structure
   3. Sound

E. Research-proven strategies for effective vocabulary-learning
   1. Systematic

2. Teaching limited number of target words in depth
3. Favoring target words that a part of learner's "verbal community"
4. Effect of foreign-language study
5. Role of games and game-like approaches
6. Teacher enthusiasm

ON-LINE ACTIVITIES:

2-CREDIT AND 3-CREDIT STUDENTS: DO INTEREST ACTIVITY #1

INTERNET ACTIVITY #1: What works in teaching vocabulary?
In the Discussion Forum, list the:

1. strategies (e.g. mnenomic devices) you have found personally helpful in remembering new words and concepts
2. three teaching devices (methods, exercises, etc.) you have found helpful in teaching new words and concepts to your students. For each choice list your reasons for using that choice.

3-CREDIT STUDENTS ONLY: DO INTERNET ACTIVITY #2

INTERNET ACTIVITY #2: Four different vocabularies
In the Discussion Forum, list:

1. five words from each vocabulary—reading, listening, writing, and speaking—that you tend to use as a teacher. Briefly describe the situation in which you would most likely use the word.
2. five words from each vocabulary—reading, listening, writing, and speaking—you would expect to find in an average student in your class.

PART II: TEACHING CONTEXT

READINGS: The Importance of Context - Manual pages 20-33

A. Definitions of context

B. Types of context
   1. Syntactic
   2. Semantic

C. Two basic reasons for teaching context
   1. To help learners develop a method for determining word meanings
   2. To introduce specific lexical items in what generally is the most effective way

D. Possible activities for teaching context
   1. Cartoons, jokes, and other kinds of humor
   2. Nonsense sentences and target words

3. Cloze
4. Sentence-combining
5. Sentence de-combining
6. Contextual sentences, based on different kinds of context:
   a. Experience or background
   b. Comparison or contrast
   c. Synonym
   d. Summary
   e. Association

ONE-LINE ACTIVITIES:

2-CREDIT AND 3-CREDIT STUDENTS: DO INTERNET ACTIVITY #3

INTERNET ACTIVITY #3: types of context
You will see four sentences containing a target word (capitalized) that can be defined from the context of the sentence. Your task is to identify which one of the four sentences is an example of the type of context presented.

READINGS: Connectives & Sentence Completion - Manual pages 34-36

7. Activities with connectives
8. Multiply meanings
   a. Polysemy and the need to teach multiple meanings
   b. Teaching multiple meanings in context

WRITTEN ASSIGNMENT #1:

2-CREDIT STUDENTS, CHOOSE ONE OF THE FOLLOWING ACTIVITIES
3-CREDIT STUDENTS, COMPLETE BOTH OF THE FOLLOWING ACTIVITIES

DO THE ACTIVITY(IES) AND SEND VIA E-MAIL OR U.S. MAIL TO YOUR INSTRUCTOR

1. Contextual Sentences: Choose ten words and create a contextual sentence for each word, providing sufficient semantic and syntactic clues so that someone unfamiliar with the word could determine its basic meaning. If feasible, create sentences that you could use to introduce or review words in your classroom. See pages in you manual and pages 1-6 in your Wordskills.
2. Sentence Combining: Create at least five sentences combining problems of your own, to be used in your own classroom if possible. You may include cues in parentheses. If you wish, you may also include words you are trying to teach.

PART III: REINFORCEMENT

READINGS: Reinforcement - Manual pages 37-47

A. Non-contextual activities that can also be effective in vocabulary-learning
B. Reinforcement activities for teaching word meanings (Manual, pp. 27-34:
   1. Word maze
   2. Crossword puzzles/word chains
   3. Synonym/antonym activities: capitalizing on lexical relationships
   4. Word structure
      a. Prefixes and roots that are most useful to teach
      b. Inferential approach to teaching word structure
      c. Inferential approach to teaching word structure
      d. Learners creating their own words, e.g. sniglets

C. Several important issues in vocabulary teaching:
   1. Choosing target words to emphasize our teaching
   2. Teaching vocabulary to at-risk students

ON-LINE ACTIVITIES:

2-CREDIT STUDENTS: DO ONE OF THE FOLLOWING TWO ACTIVITIES:
3-CREDIT STUDENTS: DO ACTIVITIES #4 & #5:

INTERNET ACTIVITY #4: The Outsider. New words can be learned in relation to words we already know. The Outsider—a list of words in which three of the words are synonyms and the fourth is an antonym—is an effective way to reinforce vocabulary learning. Your task is to create an outsider list.

INTERNET ACTIVITY #5: Fine Shades of Meaning. There are fine shades of meaning between many words that may be classified as synonyms. As you become more adept at using words, your awareness of these gradations of meanings increases. Your task is to arrange four words according to the degree of similarity between the words.

PART IV: ELABORATION

READINGS: Elaboration - Manual pages 48-59

A. Problems of number of exposures needed to learn a word

B. Two major types of practice/review:
   1. Maintenance (associated with short-term memory)
   2. Elaborative (associated with long-term memory)

C. Elaborative learning and practices associated with it:

1. Distinctiveness
2. Decision-making
3. Generation of material

ON-LINE ACTIVITES:

2-CREDIT AND 3-CREDIT STUDENTS, DO INTERNET ACTIVITY #6:

INTERNET ACTIVITY #6: Maintenance and Elaborative Practice
For effective review of vocabulary of other content, it is important to be aware of the differences between maintenance and elaborative rehearsal. Your task is to identify whether each item illustrates maintenance or elaborative practice.

D. Using elaborative strategies to help learners develop strong vocabularies
   1. Examples: creative ways of achieving elaborative learning
   2. Analogies
      a. Nature of analogical thinking
      b. Types of analogies and how to use them in vocabulary learning
   3. Mental imagery
      a. Relationship between imagizing and learning
      b. Teaching learners to imagize
      c. Motor imaging

ON-LINE ACTIVITIES:

2-CREDIT STUDENTS AND 3-CREDIT STUDENTS: DO INTERNET ACTIVITY #7 AND #8

INTERNET ACTIVITY #7: Examples and Definitions
Examples are an effective way of reviewing vocabulary words and meanings. However, instructors sometimes use definitions instead of examples when creating activities using examples. Your task is to identify whether each item is an example or a definition.

INTERNET ACTIVITY #8: Examples and Non-examples
A target word will be presented along with a situation. Your task is to determine whether the situation is an example of the target word.

3-CREDIT STUDENTS ONLY: DO INTERNET ACTIVITY #9

INTERNET ACTIVITY #9: Analogies
Analogies are a useful elaborative exercise for teaching and reviewing vocabulary. Your task is to select the word that best completes the analogy.

PART V: GENERATING VERBAL MATERIAL

READINGS: Reviewing Words Via Learning Creating Contexts - Manual pages 60-64

A. Writing as a means of learning
B. Students' generating own contextual sentences
C. Responding to quotations and word histories
D. Drawing pictures to illustrate word meanings
E. Revision as a way of learning new words and carrying over new words into writing vocabulary
F. Encouraging students to use newly-acquired lexical items in their writing

ON-LINE ACTIVITIES:

3-CREDIT STUDENTS ONLY: DO INTERNET ACTIVITY #10

INTERNET ACTIVITY #10: Denotation/Connotation
Critical reading demands that readers be aware of connotative as well as denotative meanings of words. Your task is to select the word that conveys the most positive connotation.

PART VI: CONCLUSION

READINGS: Summary - Manual pages 65-70

WRITTEN ASSIGNMENT #2:

2-CREDIT STUDENTS: CHOOSE ONE OF THE FOLLOWING ACTIVITIES
3-CREDIT STUDENTS: CHOOSE TWO OF THE FOLLOWING ACTIVITIES

DO THE ACTIVIT(IES) AND SEND VIA E-MAIL OR U.S. MAIL TO YOUR INSTRUCTOR

1. Generate a list of at least five target words, preferably words you wish to teach. Create an exercise in which you review those target words by using examples.
2. Generate a list of at least five target words, preferably words you wish to teach. Devise mental imagery or motor-imaging activities for purposes of reviewing the meanings of those words.
3. Generate a list of at least five target words, preferably words you wish to teach. Create an analogy exercise in which you review those target words.
4. Develop an exercise on word structure. See discussions of word structure on pages 7-10 and 11-12 in your Wordskills text as well as in your manual.

INTRODUCTION

"When our words change, we change." This observation by the late Edgar Dale, one of the leading experts on the teaching of vocabulary in English, shows just how important an understanding of words can be. In their book *Techniques of Teaching Vocabulary* (1971), Dale and his co-author, Joseph O'Rourke, give an example of the kind of change that can come with learning a new word. Take, for example, serendipity, "making happy and unexpected discoveries by accident." After one has learned the word, a learner might be more aware of serendipity operating in the world around her (9). Dale and O'Rourke point out what happens when you learn a new word: You find new applications for that word, and as you "order your concepts," you see new relationships. No wonder there is a high correlation between vocabulary and I.Q.; words are, among other things, labels for concepts.

Words have to be used carefully because they can have a number of meanings. This is even true of the word vocabulary, as we shall see. In the first place, there are four different types of vocabulary.

> Listening vocabulary is composed of words whose meanings we recognize when we hear them.
>
> Reading vocabulary is composed of words whose meanings we recognize when we encounter them in our reading.
>
> Writing vocabulary is composed of words we know well enough that we would use them in our writing.
>
> Speaking vocabulary is composed of words we use in our speaking.

When we use the word vocabulary in regard to teaching, we should be careful to specify what we mean.

Of these four types of vocabulary, which is the largest? For us as aduits, our reading vocabularies are usually our largest, followed by our listening vocabularies; since speech is less formal than writing, we normally encounter more complex words in what we read than in what we hear. Our third largest vocabulary would most likely be our writing vocabulary, followed by our speaking vocabulary. Because speech is less formal than writing, there are words familiar to us

that we might use in writing but would usually not use in speaking for fear of sounding stuffy or pretentious.

The relative sizes of these vocabularies for adults would be similar for children even at the third- or fourth-grade levels if they have normal sight vocabularies. But what vocabularies would be largest for kindergarten children who have not yet begun to read? For them, the listening vocabulary would likely be the largest.

Why should we as teachers be concerned about teaching vocabulary and about our students' vocabulary growth? Teaching vocabulary directly does produce results as students increase their vocabularies, as numerous studies have illustrated (e.g. Brett, Rothlein, and Hurley, 1996). But teaching vocabulary is more than "adding new words to student vocabularies," as important as that is. Research also shows that as we give time to teaching vocabulary meaningfully, students' reading comprehension skills tend to grow (e.g. Medo and Ryder, 1993). Learners also develop more options for expressing themselves. As we shall see in the following chapter, vocabulary growth expands the learner's entire world!

I. VOCABULARY BACKGROUND AND PROCESS

Is it worthwhile, for us as teachers, to take time to teach vocabulary? In nearly every period of education, there are those who suggest that we need not bother with word lists and teaching specific words. These people often suggest that if children read widely enough, they will encounter a wealth of new words and their vocabularies will grow naturally, without direct teaching. If one accepts this theory, then there seems to be little point in teaching specific words.

However, most of the research suggests otherwise. Valuable as context is for defining words, learners do not generally increase their lexicons by merely reading words in context as they happen to encounter them (Baker and Brown, 1984; Barnes, Ginther, and Cochran, 1989; Coomber and Peet, 1993). Carver (1996) looked specifically at the effect of free reading and found it ineffective in itself in increasing vocabulary. One reason is that learning words well requires multiple exposures to those words, more exposures, surely, than looking at the passage around a target word on first encounter. Also, recent research has suggested that context clues do not necessarily give satisfactory meanings for the words learners encounter. Blachowicz (1993) suggests that a contextual method is not suitable for words that refer to completely unfamiliar concepts. Schatz and Baldwin (1986) found that the more important a word is in terms of the information it conveys, the fewer clues a passage of text generally gives to that word's meaning; ironically, the more essential a word is to the meaning of a passage, the less likely its meaning will be revealed by context. Without teacher instruction, context clues might actually mislead learners as they deal with some of the most important words in a passage.

For these reasons, then, wide reading, valuable as it is for incidental practice in context and language development, might well be inadequate as a sole means of learning individual lexical items. If students are to build vocabularies so that they can later recognize the words they are encountering and so that they can use newly-learned words in expressing themselves, they need more definitional information and more reinforcement than what comes with a single encounter in their reading. The need for ample review of lexical items becomes obvious if we accept Carroll's view (1964) that words are "societally standardized concept[s]" and, like concepts generally, are learned over a period of time, not in a single exposure. Not surprisingly, vocabulary acquisition and concept formation appear to be closely related.

Direct instruction in vocabulary seems to work. Stahl and Fairbanks's (1986) summary of research on teaching vocabulary indicates, first, that children who received instruction on a certain group of words outperformed another group of children who did not receive such instruction. That is to be expected, but, second, the most surprising research finding was the effect of direct vocabulary instruction on words that have not been taught: On standardized tests of words that had not been taught, students who received direct vocabulary instruction on other words demonstrated recall on the previously unseen test words that was significantly superior to the recall of students who had not received direct vocabulary instruction, even though neither group of children had seen the words they were being tested on!

The good news is that some teachers do take time to teach specific words and strategies for vocabulary. However, there are those who often ask if it is worthwhile to teach a list of words when there is little chance that children will encounter those exact words in reading and listening. The answer is that we know that somehow, when we teach a list of words to students effectively or when we teach them strategies for deriving meaning from words, this knowledge will help them figure out the meaning of words they have never even seen before.

Of course we cannot teach children all the thousands of words they need to know; that is one reason why we encourage wide reading. That is why most educators agree that the best overall strategy for building children's vocabularies is a combination of direct and indirect vocabulary instruction.

Effective vocabulary instruction

Research has provided answers to some of our questions about what is likely to work in the classroom. Many factors affect vocabulary teaching; some of the most important are listed below.

* Active processing: When students are doing something with a word—more than just parroting a definition—they are more likely to remember that word. For example, learners might think of a situation that the word applies to. They might try to visualize something about the word, or they might even act it out. Whatever they do, in active processing they are going beyond defining and giving synonyms; they are making the word a vital part of their own vocabularies (Mezynski, 1983; Stahl and Fairbanks, 1986).

*Different contexts: We can learn much about a word's meaning through the different contexts in which it is used. And the more different contexts we encounter with that word, the more flexible we become with that word and its meaning and the more likely it is that we will remember it (Nitsch, 1977; Coomber, Ramstad, and Sheets, 1986; Coomber and Peet, 1993).

*Using several techniques for reviewing that word instead of only one: Just as learners acquire vocabulary more readily through encountering words in varying contexts, varying kinds of review activities apparently enhance vocabulary development (Mezynski, 1983; Stahl and Fairbanks, 1986). Each review activity reveals a word and its meaning in a different way, offering its own perspective on the word and its meaning. The various techniques we use with learners can become ways in which they habitually review words when they are learning on their own, without a teacher present to remind them how to review.

*Elaborative processing: To some extent this characteristic overlaps with several previous characteristics of good vocabulary teaching. What we mean by "elaborative processing" is that learners engage in a depth of thinking that creates many connections between the target word and their own experiences or other knowledge. It means questions or activities or exercises that call for more mental effort and more decisions lead to superior learning (e.g. Craik and Lockhart, 1972; Tulving, 1978); Stahl and Fairbanks, 1986, Coomber, Ramstad, and Sheets, 1986).

Some of these terms might sound technical, denoting concepts that only learning theorists would be interested in. Don't let those terms discourage you; They are no more than labels for everyday learning concepts.

We think that any program of vocabulary study is likely to result in learners' remembering the words they study—and also make vocabulary- learning something they can enjoy.

We have just summarized a few of the major findings on effective vocabulary teaching. In addition, you may have read about or tried other techniques that were also effective. In fact, there are many more characteristics of good vocabulary teaching, and we will look at some of them. One way to be an excellent vocabulary teacher is to remain alert to what works in your classroom.

Using Context

Think about how we naturally learn the meanings of new words and how we, as mature readers, deal with problem words. What do you do when you encounter an unfamiliar word in your own reading? Although we may tell our students to "look it up," that's probably not the first thing most of us do. Instead, we are more likely to look at the other words around the problem word and determine its meaning from that. For example, look at the following sentence:

As an exlicea person, I am concerned only with what works.

Of course you don't recognize exlicea because it is not a real word; it was made up just for this example. Even so, you can probably tell that exlicea should mean something like "practical" or "pragmatic." You reached this conclusion by making an inference from context: You took the information in the sentence, added your own knowledge, and came up with likely synonyms for exlicea. The process of inferring from context is the most frequently used strategy for dealing with unfamiliar words. As mature readers context comes so naturally to us that we are hardly aware we are using it. But becoming more aware of context ourselves will enable us to help context become "second nature" to the children we teach. Although context will not always give us the meaning of words, context often does provide information we must have if we are to make any rational decision about word meanings.

Deriving meaning from context, as well as other inductive approaches, often works very well. An inductive approach is one in which learners figure out answers for themselves based on the information provided; they don't have to search for additional material. This includes learning vocabulary through context, as well as other possibilities we will discuss later. One drawback to inferential learning is that it usually takes longer to challenge learners to figure out a word through context than it would to simply tell the meaning of that word. Even so, the extra processing required to determine a word's meaning through context "pays off" in more meaningful learning and better retention.

Think about this extra processing and how it aids learning as you figure out the meanings of two more nonsense words in the following two sentences:

Pete thought he was traveling bereat, but everyone recognized him.

What does bereat mean? The word but gives an important clue; the final clause makes it clear that "everyone recognized him." From this we can infer that bereat must mean something like "incognito" or "in disguise."

A similar process helps us determine the meaning of cligstil in the following sentence: Students used to be very easy to manage, but now they seem more to be cligstil. Context suggests several possibilities for the meaning of the nonsense word cligstil: "stubborn," "uncooperative," "naughty," or "unruly." In this case we cannot be precise about the word meaning, but we do have a good idea of what meaning the writer intends. We would probably want to check our inductive hunches by turning to a dictionary—a good thing to encourage our students to do, too.

Yes, we should encourage our students to use context. When a reader comes to a problem word and then goes back to the beginning of the sentence, he is trying to build a sense of context. We should not discourage students from making repetitions for the sake of dealing with difficult words.

Often the information that comes after a troublesome word provides clues to its meaning, as in this sentence:

> It seemed that the passengers had hardly taken their seats before the plane began to ascend into the clouds.

The three words after ascend give the best clues to the meaning of the word, so it's a good idea to remind students that they should not rely exclusively on looking at earlier points in the sentence to get information about a word. In many cases it will help to look ahead in the sentence, or perhaps even move on to the next sentence.

Word Structure

But what happens when context doesn't seem to help unlock the meaning of an unfamiliar word? Mature readers will probably turn next to word structure: prefixes, roots, and suffixes. If we look at the word postpone, for example, we see the prefix post-, which means "after." When we look at the word polygamy, we see the prefix poly-, which means "many."

Even though readers might know the meanings of post and poly, they might not know the roots of those two words, pone and gamy. That's why we suggest readers be taught to use word

structure along with context. Notice how the sentences help define the words postpone and polygamy:

The softball game was postponed until next week because of rain.

If we realize that post- typically means "after," and that rain generally is not good for softball and other outdoor events, it's fairly easy to determine that postpone means "put off" and that the game will be played after the originally scheduled date.

We can follow a similar procedure in the following sentence:

The law forbids polygamy, so one person may legally have no more than one spouse at any given time.

Isn't it interesting that almost all the information after the target word provides us a definition—if we know how to make inferences? If one person may have only one spouse at a given time, then polygamy must mean "having more than one spouse at the same time." In fact, the inclusion of definitions after an important term is found in textbooks more often than we realize. This is partly because good textbook writers often try to help students with difficult terms by "writing them into the text" in natural, subtle ways like these. Our job is to make students aware that this happens and to show them how to make inferences from context.

Sounding out a Word

What do we do when both context and word structure fail to unlock a word? One thing we do almost instinctively is to sound out the word. This is not a strategy designed to clarify meaning; it is based on the assumption that the reader knows the word but doesn't recognize it, perhaps because the word's spelling doesn't match the way the word sounds. If a reader encounters the word sphinx, for example, and doesn't recognize it as a familiar word, then she might try sounding it out to determine that the ph represents the /f/ sound, i sounds like the short i in pit, and x sounds represents the /ks/ sound. If she puts it all together, she should figure out the pronunciation and realize that the word is sphinx.

The analytical approaches we have been discussing, particularly context and structure, are sometimes called "strategies for vocabulary independence." They enable students to figure out new words when a teacher or parent isn't there to supply the definitions.

So far we have considered three overall findings of research on effective vocabulary teaching. Effective vocabulary teaching is associated with active processing, encountering the word in different contexts, using several techniques for review, and elaborative processing.

Other Research Suggestions for Teaching Vocabulary

What other findings can guide us in teaching vocabulary? Conclusions from a comprehensive study of vocabulary research by Manzo and Sherk, published in the early 1970s, are just as valid today and useful for classroom teaching as they were nearly three decades ago:

1. Effective vocabulary instruction is systematic. It follows a set plan, with time allotted for teaching the words children need to learn. It also means having a rationale for the words we teach and the approaches we use.
2. It is more beneficial to teach a limited number of words in depth than to teach a large number of words superficially. For various reasons, learning one word enables learners to go on and learn even more words. Emphasizing active processing in our teaching helps our students learn to teach themselves how to unlock the meanings of words.
3. Linguists suggest that for teaching vocabulary it is better to choose words to teach that are part of what has been called a child's "verbal community"—words that the child is likely to encounter naturally. A child's verbal community might be a variety of places, such as his home, the grocery store, other teachers' classrooms. If we teach words that are part of a child's verbal community, those words are more likely to be reviewed and reinforced in the course of using language in everyday life.
4. Studying foreign languages enhances vocabulary in the student's native language. In one study of Philadelphia middle-schoolers, those who were taught Spanish, Latin, or French significantly outperformed those who were not taught a foreign language—on a test of English vocabulary (Gaffney; Le Bovit, 1973; Mavrogenes, 1987). If we are serious about helping children strengthen their vocabularies, we should be avid supporters of effective foreign language instruction.
5. Games and game-like approaches enhance vocabulary-learning. Earlier we pointed out that learners need to have a number of exposures to target words in order for those words to "stick." How do we give them those exposures? The best way is through various kinds

of word games, a tradition in teaching that can be traced all the way back to Socrates. We will include various kinds of word games you can use as we go along.

6. A final factor from the research is a special favorite for those of us in the classroom: Teacher enthusiasm makes a real difference in vocabulary teaching. Children whose teachers were enthusiastic about words appear to build bigger and stronger vocabularies. This is probably no accident. In teaching we soon learn that enthusiasm makes a difference; some have said that if we aren't enthusiastic about what we teach, then we shouldn't be teaching it. There are many ways to show our enthusiasm for words. We can bring to class those words that we find amusing or curious. Or when some of the words we encounter in class have curious histories, we might pass on those histories to our students. Finding amusing contexts in which to use words is yet another possibility. Furthermore, the word games we will be studying in this course give plenty of opportunity to show enthusiasm for words.

As we go through the activities in the following exercises, think about the ideas we have talked about and how you can apply them in your own classroom.

II. THE IMPORTANCE OF CONTEXT

Lesson 1: Types of Context; Nonsense Words and Sentences; Cloze Exercises

As we have already seen, for students reading at their grade level—and for adult readers as well—the most frequently-used strategy for discovering the meaning of unfamiliar words is to relate such words to their context. Notice how the surrounding information helps you figure out the archaic English word fane in the following sentence:

> Freedom of religion in the United States means that a person may go to any fane she chooses—or to none at all.

Context shows that fane means "sacred place" or "house of worship."

Syntactic and Semantic Contexts

When we work with students, we should be aware of two types of context: syntactic and semantic.

Syntactic context refers to the grammar of a sentence—how words relate to each other structurally in sentences and in units of discourse beyond the sentence. For example, in the following sentence we can determine the part of speech of the word fleeped:

> To keep the antique quilt from fading, Martha fleeped the curtains whenever the sun shone into the room.

How can we tell that fleeped is a verb? The most obvious clue is its location directly after the subject of the main clause: Martha did something to the curtains. Furthermore, the -ed ending also tells us that the verb is in the past tense.

What would we do if we encountered a group of words such as the next one?

> *The cowboy brave his horse on jumped and away rode.

This non-sentence creates difficulties because it does not follow the patterns of English syntax. In order to read it, we almost need to give up on context and read it word by word.

Semantic context refers to meaning and the way word meanings relate to one another in context. In the sentence about the antique quilt, words and groups of words such as antique quilt, fading, curtains, and sun shone suggest that fleeped probably means "closed." This illustrates why it is best for us as teachers to avoid defining problem words in every instance; instead, we should encourage the kind the kind of risk-taking that allows learners to figure out the meanings of words by themselves. In order to help them, we might ask questions referring to the problem

word and its context. For example, if a learner assumes fleeped means "tear down," we might ask whether this response makes sense in the context of the sentence. To provide another learning experience, we could model the use of context and structure when we figure out word meanings, discussing with students why we do what we do.

When we teach context as part of vocabulary study, we should have at least three objectives in mind:

* First, we teach context as a vocabulary-independence strategy—not merely a way of figuring out meanings of individual words but also as a way to see the words on the page as a series of semantic relationships.
* Second, we can teach context as a way to figure out difficult or unknown words.
* Finally, at a later stage, activities can also provide valuable review of the target words.

Starting with Cartoons

Cartoons provide a way to help learners appreciate the importance of context. A cartoon is often humorous because what is happening is wildly out of place and does not fit the context. For example, in one cartoon from "The Far Side" by Gary Larson (1984), a man sits at a table in a diner, looks at the menu, and tells the server, "I guess I'll have the ham and eggs." There's nothing funny about that, but the humor comes when we notice that all the other customers in the diner are either hogs or chickens! Needless to say, the startled expressions on their faces makes it clear that they find the man's comment highly inappropriate. It is the context that makes the man's "ham and eggs" comment so incongruous—and so funny.

In another Gary Larson cartoon we see a crowd of penguins jammed together on an ice floe. Suddenly one penguin jumps up, flaps his wings, and breaks into song: "I gotta be me, oh I just gotta be me...." Once again, the cartoon is funny because of context: The ludicrous attempt of a lone penguin to assert his individuality while surrounded by hundreds or thousands of others that all look exactly like him.

In working with students and context, we might think of an everyday situation that seems unremarkable in itself and imagine how that situation could become funny by changing its context. We might also encourage the class to think about what things must be understood in order to "get the joke." We could either provide a situation for students to respond to or have them create

their own. In either case, they should explain how context affects the "meaning" of the situation and consider how this can be carried over into purely verbal contexts.

Nonsense Sentences and Words

We can use cartoons similar to the ones we have described in order to show the importance of context in vocabulary study. We can also use vocabulary activities in which one word throws the whole sentence out of kilter:

Wheels make the feet go around on a clock.

What is wrong in that sentence? The word feet, of course. And what word might be substituted for feet to produce a sensible sentence? Hands is the word we should use for that sentence to make sense semantically.

Another way to teach context is by using nonsense words, as in the following sentence:

The rich man was so shortled he didn't have to work for a living.

In order to define shortled, the learner must look at the rest of the sentence. This, of course, gives good practice in using context. In a class, students will sometimes come up with conflicting words and meanings, or perhaps with words that are close in meaning. This can provide an excellent opportunity for discussion of context and why some meanings fit better than others. Sentences containing violations of context also show learners the power of context in figuring out unfamiliar words in their reading.

Cloze Exercises

To give practice in using context, we can simply remove some of the words that are already there, as in the following:

Only You Can Prevent Forest Fires

Fires are a major _____ to our forests. Some _____ are caused by lightning. _____, a large majority of _____ fires—about ninety percent—_____ caused by humans. For _____, hunters and campers sometimes _____ to use good judgment. _____ thoughtlessness has led to _____ forest fires.

from James E. Coomber and Howard D. Peet, *Wordskills* 1 (Evanston, IL: McDougal, Littell, 1993), 72.

Readers need to "fill in" the empty spaces or blanks in order to make sense of the passage, giving them effective practice in using context. Another approach involves the use of numbers or letters

to identify each blank. Then multiple choices may be given for each numbered or lettered space, requiring students to select the one that makes sense. For example, in the first blank space in the preceding example, the following choices could be offered:

a. contribution b. threat c. unless

The correct fill-in for the first blank would, of course, be threat. For a more challenging exercise, students can be required to supply their own words with no suggestions to choose from.

When such a technique is used systematically, it is called the cloze procedure, from the word closure. Research has supported the effectiveness of cloze as a teaching method in various situations: English as a second language, developmental reading at nearly all grade levels of school, working with at-risk students in reading improvement, instruction with early readers, and adult education. Even though this process of filling in the blanks will not necessarily teach students the meaning of specific words, unless we design it that way, it definitely helps them develop a sense of context.

After students have practiced using cloze exercises with familiar "common-sense" words, they can move on to cloze exercises that do reinforce the study of new words. To do this, simply introduce the target words and help children study them as you usually would. Then you can develop sentences or paragraphs in which the target words themselves are omitted. In this situation, students must combine their knowledge of the new words with their understanding of context in order to make the right decisions.

Some educators prefer the "open" blank rather than multiple choices. When learners must come up with words of their own, they are more likely to think deeply about the process and to learn more about what will and will not work for each slot in the sentence. In the example above about forest fires, words other than threat could fit in the first blank; danger would be one possibility. Another choice, contribution, fits syntactically but, as we see when we read the whole passage, it would not fit semantically because it does not express the meaning of the passage. What if a student chose unless for the blank? That word does not fit either the meaning or the structure of that sentence; it is unacceptable both semantically and syntactically. This requires the student to test the word for syntax (Does it fit the normal sentence structure of the English language?) as well as for semantics (Does the word make sense in context?).

Of course, the more words we omit from a passage, the more difficult the cloze exercise becomes. And in most situations, the open-ended cloze exercise is more difficult than the multiple-choice exercise. Some teachers follow a process of moving from easy to more challenging exercises by gradually increasing the number of words omitted:

1. Delete every tenth word but provide a choice of words that may fill in each blank. Then move on to examples in which every tenth word is deleted without offering any choices.
2. Follow the same procedure but delete every seventh word.
3. Finally, delete every fifth word, first offering choices and then leave only blank spaces.

Learners should remain at each stage until they are comfortable with the passages and are able to determine what should go in the blank spaces.

Lesson 2. More Cloze Exercises

Developing a Sense of Context with Cloze Exercises

For pre-schoolers or first-graders who have not developed a sense of context or who cannot decode very well, cloze exercises can be done as a listening activity:

How many words can you think of that fit this sentence?

Bears like to eat _____.

Any reasonable answer—seeds, berries, worms—is fair game.

Next, the teacher can move from the open-ended sentences to lengthier sentences with several words omitted. For example, Camille L. Z. Blachowicz recommends an "oral cloze" exercise for the primary grades as a means of teaching context. A simple example is given based on Judith Viorst's bookbased on *Alexander and the Terrible, Horrible, No-Good Very Bad Day* (1987). After children are familiar with the story, an occasional key word can be omitted as the story is read aloud. The words underlined below are the ones to be omitted:

> I went to sleep with gum in my mouth, and now there's gum in my hair. When I got out of bed this morning, I tripped on the skateboard. Then I accidentally dropped my wool sweater in the sink while the water was running. I could tell it was going to be a horrible, very bad day.

A teacher reading this story could pause at each underlined word and ask children to suggest what word might belong there. Any word that fits syntactically and semantically can be accepted. For example, instead of hair at the end of the first sentence, children might respond with ear or pillow or sheets. These words are acceptable because they make sense in the passage even if they are not the words actually used in the story.

Another approach for remedial teaching involves joining cloze with a language-experience approach. A fourteen-year-old North Dakota student dictated the following sentences to his teacher:

> Last summer my Dad and I went fishing on Pine Lake. We took minnows for bait to catch the fish. A kingfisher flew over us.

Several days later the teacher re-wrote the student's story, with some words deleted, to see if the student could fill in the blanks:

> Last summer my _____ and I went fishing on Pine _____. We used _____ for bait to _____ the fish. A kingfisher _____ over us.

The student filled in the blanks better than the teacher expected, and similar activities over time began to show that the student could do better than anyone might have thought.

Teaching Specific Words with Cloze Exercises

Although cloze exercises are not intended primarily to teach new words, they can be adapted to help students strengthen their understanding of important content words by using them in a variety of contexts. For example, assume that a class has been learning the meaning of sentence, subject, predicate, and capital in their study of English. After these terms have been explained and illustrated, they can be reinforced by using a cloze exercise such as the following, in which students should choose one of the four content words in the list above to fill in each blank:

> A _____ is a group of words that tells what somebody is doing or that asks a question. The _____ part of a sentence generally tells who is doing something or what the sentence is about. The _____ part usually tells what is being done. Every sentence should begin with a _____ letter.

This approach can be used in science, social studies, or any number of other subjects. For example, words important to the study of geography can be woven into a paragraph that is

discursive, not limited to definitions alone. The following passage could be used after students have been introduced to the words arctic, desert, glacier, and iceberg:

> Even though it is extremely cold, the _____ region is actually like an enormous _____ because few plants or animals can live in it, especially in winter. When we think of the Arctic, we usually see a gigantic _____ rising high above the surrounding area and sliding inch by inch down a slope or a valley over the course of many years. Sometimes enormous chunks of ice break free, with each block forming a (an) _____ that can float out into the ocean for many miles.

Obviously such an exercise would be most valuable after students have studied the subject and perhaps seen films of glaciers and icebergs in the Arctic region.

On a more advanced level, you might give a short paragraph that provides several bits of information about a particular term. The student must read all the information in order to decide which content word fits the blank space:

> Scientists have learned much by studying the remains of plants and animals that lived millions of years ago. Sometimes they have found the skeletons of animals that have been preserved. In other cases, they have found the remains of leaves or the shells of sea animals. Scientists can even get information by looking at the footprints that have been preserved in rocks. Taken all together, these various kinds of remains are called _____.

Cloze can be most valuable in reinforcing each student's understanding of new words, especially since the focus is on using these words in context. This provides a good way to help students become more comfortable with content words by offering a chance to use them in discourse.

Conclusion

Cloze offers many possibilities for making students aware of the importance of context and enhancing their comprehension in the process. They are also easy to teach; passages can be selected from a wide variety of material and words can be deleted to formulate a cloze exercise. It is also a fairly flexible activity and can be fitted into short time periods.

The following guidelines can help make cloze exercises more effective for students:

* Ask learners to discuss the words they use to fill in the blanks; they should give reasons for their choices and should have a chance to talk about them. If students

simply turn in their cloze exercises without discussing them, then the potential value of the activity is diminished.

* After students have checked and discussed their responses, give them a copy of the complete passage from which you constructed the exercise. Seeing the original version can help them see the various contextual relationships of the passage.
* Choose a passage for cloze that the learners have read some time in the past. This is especially for remedial readers, who will see contextual relationships better if the have a general idea of what the passage is about. Something from last year's basal reader might be a good choice.
* Choose reading material that matches the learner's independent reading level. If students encounter too many difficult words, they will be required to focus on individual words and pay less attention to context.
* Use cloze regularly. It's like learning to play tennis or mastering a musical instrument; regular practice builds skills and raises the level of performance. If you choose to work with cloze, try to do it several times a week, even if it's for short periods of time.

As you can see, cloze offers many teaching possibilities; it can effectively build that sense of context your students need to figure out word meanings on their own.

Lesson 3. Sentence Combining

Another way to make students aware of the importance of context is through sentence combining, a method sometimes used in language-arts programs. The process itself is very simple: Students are given a set of two or more short sentences, called kernels, which are then combined into a single, longer sentence. Like cloze, sentence combining requires learners to look at the larger picture of the relationships of words in sentences, as in the following example:

The catcher caught the ball.

The ball is a foul.

These two kernels could be combined this way:

The catcher caught the foul ball.

There are other acceptable combinations as well:

The foul ball was caught by the catcher.

The catcher caught the ball, which was a foul.

Any combination is acceptable as long as it preserves the meaning of the original kernels. This method is effective because it allows students to discuss whether or not each combined sentence is valid. This helps them see that the same meaning can be expressed in a number of ways. Certainly this kind of activity can help students write better sentences as well as understand the variety of writing styles they will encounter in their reading. Sentence-combining can also serve as review for specific target words you are teaching when you incorporate those target words into a sentence-combining exercise.

In fact, when you work with sentence-combining problems, it can be useful to ask students to combine the kernel sentences in as many ways as they can. In sentence-combining, as in cloze exercises, it is important to give students opportunities to share their work with the class. As they hear each others' examples, they learn more about the English language and the way we combine words to express the meanings we want others to understand.

For example, the following kernels can be combined in more than one way:

Mr. Carson sips coffee.

He sips from a cup.

The cup is paper.

The coffee is bitter.

The coffee is black.

This example requires students to organize the bits of information into a logical, coherent sequence of words:

Mr. Carson sips bitter, black coffee from a paper cup.

Cued Sentence-Combining Exercises

The preceding example gives an obvious, straightforward solution, but you can make the exercise even more challenging by giving a cue to point students in a certain direction. For example, if you want to use a sentence-combining exercise to reinforce their understanding of a grammatical concept, for example relative clauses, you could give a relative pronoun in parentheses like the (which) in the example below—to steer students in that direction. You could also reorganize the sequence of kernels to help students understand where the relative clause should go.

Mr. Carson sips coffee.
(which) The coffee is bitter.
The coffee is black.
He sips from a cup.
The cup is paper.

This suggests the following solution:

Mr. Carson sips coffee, which is bitter and black, from a paper cup.

Especially when you use more complex exercises, like the one above, it is usually a good idea to provide a cue. Otherwise, if students are left on their own, they will tend to stick to the most obvious and familiar ways of structuring their sentences. As students become more adept at working with sentence combining, you can provide a mixture of cued and non-cued exercises.

Of course, students can develop their own sentence-combining exercises, individually or in groups. Sharing the exercises they create with their peers enhances the fun and the learning. However, make sure that they can solve their own puzzles. It is important to keep in mind that sentence combining is not merely a "game" in which students try to outdo each other. Younger children may think that it is simply a matter of devising the longest sentence in the class. So it is a good idea to require students to limit the number of kernels to six in order to retain the proper

focus. Also, they must be able to complete their own sentence-combining exercises before handing them in or sharing them with others.

Like cloze exercises, sentence combining works best when it is done repeatedly over a long period of time and when students have opportunities to discuss the ways they developed their own sentence combinations and to hear examples from others. Although students are given the vocabulary and basic structure to work with, creativity can come in the ways they combine kernels. In this process, repeated many times with different problems, they become aware of the variety of ways in which context can be constructed and of the many contexts they will encounter.

Reviewing Specific Words

Sentence combining can be used to review and reinforce specific words we want to teach. Notice how the target words are highlighted in the following example:

There are many heroes.
The heroes are unsung.
(who) The heroes thrived.
They thrived on land in the West.
The land was infertile.
The land was arid.

An obvious combination would be this:

Many unsung heroes thrived on infertile, arid land in the West.

Students increase their understanding of the meaning and significance of the target words as they devise their own ways of arranging the bits of information into a coherent statement. This kind of exercise accomplishes two goals at once: focusing students' attention on context while reviewing and reinforcing important words.

Sentence Decombining

Another way to focus on important words is to have students decombine a sentence or paragraph into bits of information given in individual kernels. Here is a paragraph followed by an example of how the information in it could be arranged to focus on the meaning of important words:

Beginning in the late Triassic period, all life on land was dominated by reptiles that came to be called dinosaurs. These animals, sometimes weighing as much as 30 tons,

flourished at least 215 million years ago. At the same time, many ancestors of today's smaller animals also appeared. Dinosaurs continued to exist for about 150 million years until the end of the Cretaceous period, when the largest of them suddenly and mysteriously became extinct. However, mammals and smaller dinosaurs, which are the ancestors of today's birds, continued to survive after the larger dinosaurs had disappeared.

Obviously, some kernels could focus on information about dinosaurs in particular. However, there is also important information about the meaning of the terms Triassic and Cretaceous. Some of this information is not immediately apparent and must be inferred; kernels could be worded in ways that focus on this information:

Dinosaurs appeared in the late Triassic period.

The Triassic period ended about 215 million years ago.

Some dinosaurs weighed as much as 30 tons.

Small animals also appeared about 215 years ago.

Dinosaurs dominated life on land for about 150 years

They became extinct at the end of the Cretaceous period.

This was about 65 million years ago.

Mammals and smaller dinosaurs survived

The smaller dinosaurs are ancestors of birds.

In order to focus attention on the important pieces of information, you may want to talk through the paragraph before students begin work on it. In particular, show how reasoning can enable us to establish the approximate date for the end of each period.

Dinosaurs dominated life in the late Triassic period.

Dinosaurs first flourished about 215 million years ago.

Therefore, the Triassic period must have ended about 215 million years ago.

Dinosaurs flourished for about 150 million years.

They became extinct at the end of the Cretaceous period.

Therefore, the Cretaceous period must have ended about 65 million years ago.

In order to establish the date for the late Triassic period, students must make connections between bits of information in the first two sentences of the original paragraph. Even more challenging is the date for the end of the Cretaceous period.

This can be established by starting with the end of the Triassic period (215 million years ago) and subtracting the 150 million years of dinosaur existence to determine that the Cretaceous period ended about 65 million years ago.

Even further reinforcement can be achieved by waiting a few days and then giving students the kernels they extracted from the original passage. Then have them combine the kernels into their own sentences and compare them with the original. This provides excellent emphasis on the importance of understanding content words and of knowing how to use them in context.

Lesson 4. Contextual Sentences; Multiple Meanings

So far, many of the activities we have suggested have been designed for practice in context generally or for reviewing target words. You probably recall that inductive methods of teaching vocabulary are especially effective and that one of the best ways to introduce a new word is to present it in a sentence. If students encounter an unfamiliar word in their reading, they should be encouraged to figure it out from the contextual clues provided by the sentence preceding and following the word. Such active processing not only increases the chances of remembering the word but also gives practice in using that most important vocabulary-independence skill, context.

Contextual Sentences

Let's say you want to introduce the word aperture to your class. Instead of simply providing the definition, you might introduce the word in context:

> We could never have escaped from the canyon except for an aperture in the wall of rock, through which we passed into a large valley.

The way in which learners arrive at a definition depends on their own background of experience. It also depends on contextual clues in the sentence, as in the problem of escaping from the canyon. There are at least a half-dozen kinds of context clues that readers often find useful:

> Experience or background: Having lived on the northern plains for years, Clare prepared for the frigid temperatures of winter by gathering a good supply of fuel.

Comparison or contrast: Ryan predicted that the committee would be open to his plan, but he found committee members intransigent and unwilling to consider any change.

Synonym: What is labeled hearsay in a court of law is often called gossip over the backyard fence.

Summary: It was a scene of confrontation, with the strikers clustered on one side of the room, the boss and her assistants in a group on the other side, and an army of police officers standing guard.

Association: Brown eyes, black hair, and even that funny little smile we have are hereditary gifts from our ancestors.

Reflection of a mood or situation: We entered the abandoned house through a broken, creaky door. Plaster fell from the walls and ceiling, and cobwebs stretched across several windows. All that remained was a scene of desolation.

If students have practiced using context clues such as these, they will become more and more adept at determining the meanings of difficult words and will comprehend texts more fully. They can use these skills to particularly good advantage when they read material in social studies and science, texts that often contain difficult words.

In order to be effective, contextual sentences must give enough information to allow the reader to determine the meanings of problem words. Sometimes when we ask our students to use a word in a sentence, they give an example which fails to show that they know the word. For example, what if you asked a student to use the word agglutinate in a sentence and the student replied, "Uncle Harvey likes to agglutinate"? Would you know whether or not this student really knew the meaning of the word? Of course not. Unfortunately, the examples we give as teachers are not always much better. In order for students to understand the meaning of target words and to have meaningful practice in using context, we need to give them sentences that provide adequate contextual information.

For additional practice and reinforcement, practice writing your own contextual sentences. Write six examples, each illustrating one of the types of context discussed earlier. Underline the target word in each sentence. Be sure to give enough clues to enable the reader to figure out the meaning of each target word.

Connectives and Sentence Completion

When we focus on teaching vocabulary, we tend to think of difficult words that have complex meanings. However, you may be surprised to learn that students sometimes have problems with some of the most frequently used words in the language—words we would never expect to create any difficulties. In research at the University of Alberta, Jean Robertson (1968) found that many children in elementary schools did not fully understand the meaning or use of connectives such as or, so, and because. In fact, other researchers have reported similar findings with high-school students and their unfamiliarity with such common connectives as therefore, however, and consequently. Why do some students not know these words? One reason might be that good learners apparently tend to visualize words they are learning. Most of us probably have mental pictures of many of the words we know, but it is difficult to form mental pictures of so, therefore, or consequently.

In order to address this problem, we can develop exercises that allow learners to complete a single sentence in several different ways, each one using a different connective. This helps them learn the significance of each connective and see the difference that that connective makes in a sentence:

1. The coach fell
   - and _____
   - but _____
   - because _____
   - so _____

2. The team lost the last game
   - while _____
   - after _____
   - because _____

3. Jo disagreed with the teacher
   - and _____
   - but _____

This kind of activity not only teaches connectives in context but also provides opportunities for learners to practice sentence writing.

Another way to help students practice is to give sentences in which the connective is omitted. This requires learners to think about the meaning of the whole sentence in order to determine the proper connective:

1. Aunt Louise fixed the lamp, _____ it still didn't work.
2. We will go to the lake _____ the weather is warm.
3. The test was supposed to be difficult, _____ we studied hard.

For some blanks there is more than one correct word possible. Another option would be to give multiple-choice answers.

Multiple Meanings

Some students have difficulty with words that have multiple meanings. For example, think of the word bank. What comes to mind? You may think of a place where money is kept, but the same word can refer to the sides of a creek or river. You might also think of a soil bank or blood bank. There are the idioms, such as "You can bank on him." Engineers bank the curves on a highway, and pilots bank their planes in order to make a turn. Obviously, context determines which bank is the right one.

Words with multiple meanings are sometimes a problem as we teach reading in the content areas, for many words with general, familiar meanings in our everyday worlds have specialized, even technical meanings in specific content areas. The student who assumes that office in a social studies text is a room with a desk, file cabinets, and computer where someone works might miss the point—if the office being referred to is a political position such as the office of governor. Common words like product, plot, congruent, and obtuse have specialized meanings in math. In any content area we happen to be teaching, we should be alert to vocabulary that needs to be taught, and this includes familiar words that also have specialized meanings.

To give students practice with this kind of context, we might focus on a word that has more than one definition and give several sentences, each using that word in a different way. Their task would be to match the right definition with each sentence.

calculate: (a) to determine by arithmetic; to compute
(b) to determine by reasoning; to estimate
(c) to plan

_____ 1. We tried to calculate the risk by studying similar situations in the past.
_____ 2. The quarterback sneak was calculated to surprise the opposing team.
_____ 3. After getting all the prices, Sarah was able to calculate the total cost.

It is interesting to look through a dictionary and see how many words have more than one meaning. Then it becomes easier to understand why students are often confused by a familiar word used with an unfamiliar meaning in a certain context. In fact, some research indicates that students might have more problems with a familiar word used with an unfamiliar meaning than they would have with a totally unknown word.

Summary

As mature readers, we are accustomed to using context to determine word meanings. In the preceding pages we looked at a few ways to teach the different dimensions of context. Also, a teacher who systematically explains specific words in the context of a classroom reading assignment is helping those learners add those specific words to their lexicons, as Brett, Rothlein, and Hurley (1996) demonstrated in their study of vocabulary-learning in fourth-graders. Various studies (e.g. Buikema and Graves 1993) have also demonstrated that teaching contextual analysis skills pays off; students become more adept at using context. When we help learners develop strong context skills, we give them powerful vocabulary tools for their reading and writing.

A	C	U	T	E	A	U	D	C	G	K	F
F	H	N	I	N	T	N	L	H	M	O	I
F	A	C	N	A	V	I	G	A	B	L	E
L	M	O	H	B	L	F	E	P	N	T	S
I	B	U	U	L	F	Y	S	R	E	K	T
C	E	P	M	E	I	S	T	I	S	V	A
T	R	L	A	N	D	L	U	B	B	E	R
E	Y	E	N	A	G	Q	R	N	Y	D	H
D	I	E	F	U	E	U	E	Z	L	O	L
C	J	P	N	S	T	M	K	E	M	U	E
I	N	S	T	E	P	F	I	O	X	S	B
F	A	N	T	A	S	Y	H	A	R	E	M

acute
afflicted
chamber
chap
douse
enable
fantasy
fiesta
fidget
gesture
harem
inhumane
instep
lank
landlubber
nausea
navigable
quiet
uncouple
unify
yen
yield

For a further challenge, the word list beside the maze could be replaced with definitions or synonyms of the words embedded in the maze. This would place greater emphasis on vocabulary study because students would have to be familiar with words that match the given definitions or synonyms.

Crossword Puzzle or Word Chain

Look in any newspaper and you will probably find a crossword puzzle. There are also books of crossword puzzles on most newsstands. This popular word game provides valuable opportunities for vocabulary learning. One element that makes the crossword puzzle so flexible is that it can contain several kinds of clues—synonyms, antonyms, or definitions—in the same puzzle. It can also be used to teach a specialized vocabulary for a single assignment. Below is a sample of using a crossword puzzle to help teach Henrik Ibsen's play *Hedda Gabler* to upper-grade students.

HEDDA GABLER

ACROSS

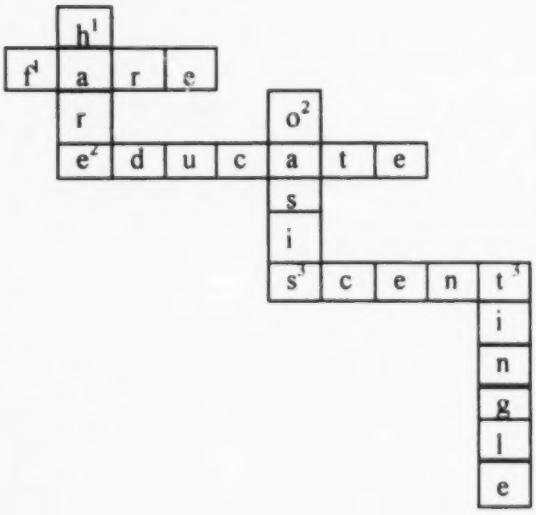
1. The protagonist
2. City where Ibsen held his first director's job
10. Hedda seemed to be afflicted with this wickedness
11. To keep
12. Sixth tone of the scale
13. Word meaning maiden name (Hedda's was Gabler)
14. Brack's job would require that he wear one of these at work
15. Vine leaves come from this plant
16. Abbr.: Registered Nurse
18. Next to
20. That thing
21. First Name of man who "discovered" Ibsen
23. Hedda saw Aunt Juliane as one
24. Tesman's maid
26. Initials of Hedda's first love
27. Ibsen's first great play that came out in 1866
30. He wanted to have an affair with Hedda
33. Abbr.: receiving office
34. A fuel
35. Hedda's father's job
38. Single
39. A good time
40. Abbr.: kinetic art
41. Swindle (like most of Brack's dealings)
42. Lovborg was shot at her place
44. Contends (as when Thea and Hedda contend for Ejlert)
45. See 15 Across

DOWN

1. Ibsen's first name
2. Milestone: like Hedda's marriage
3. Hedda wants Lovborg to ____ beautifully
4. Abbr.: demand loan
5. Hedda burned Ejlert and Thea's ____
6. Poet's "evening"
7. Abbr.: reference
8. Thea's married name
9. Negative vote
11. Ejlert had a difficult time remaining in this condition
17. Steal
19. Exist
22. Small hole allowing escape
23. For each
25. Abbr.: tuberculosis
28. Pres. pl. of be
29. Ibsen's home country
30. Thea's and Ejlert's child
31. Aunt Juliana's sister
32. Lovborg's downfall
35. Two of Hedda's most prized possessions
36. Prefix meaning "in"
37. Hedda's pistol had a full one
39. Thea was seen by Hedda as one
41. Abbr.: Channel Islands
42. Abbr. For General Gabler's drill instructor
43. Ibsen exiled himself in 186__ (Roman numeral)

H[1]	E[2]	D[3]	D[4]	A	/	B[5]	E[6]	R[7]	G	E[8]	N[9]
E[10]	V	I	L	/	S[11]	A	V	E	/	L[12]	A
N[13]	E	E	/	R[14]	O	B	E	/	I[15]	V	Y
R[16]	N	/	R[17]	/	B[18]	Y	/	G[19]	/	S	/
I[20]	T	/	O[21]	L[22]	E	/	P[23]	E	S	T	/
K	/	/	B[24]	E	R	T[25]	E	/	/	E[26]	L
/	/	/	/	A	/	B[27]	R	A[28]	N[29]	D	/
B[30]	R[31]	A[32]	C	K	/	/	/	R[33]	O	/	/
O[34]	I	L	/	/	G[35]	E[36]	N	E	R	A	L[37]
O[38]	N	E	/	F[39]	U	N	/	/	W	/	O
K[40]	A	/	C[41]	O	N	/	D[42]	I[43]	A	N	A
/	/	V[44]	I	E	S	/	I[45]	V	Y	/	D

The crossword you create need not be as complex or challenging as the examples in newspapers. For the lower grades, a simple word chain like the following written at the fourth-grade level may be more appropriate:



ACROSS
1. cost of ticket
2. to teach
3. the way it smells

DOWN
1. kind of rabbit
2. fertile spot in desert
3. stinging feeling

If you do not have the time, computer programs are available for creating both crossword puzzles and word mazes. All you need to supply are the words and the clues.

The Outsider

Edgar Dale and Joseph O'Rourke (1971) made the point that we learn new words in relation to the words we already know. That concept can be reinforced by one simple exercise we call "The Outsider." It is simply a list of four words in which three are synonyms and the fourth is either an antonym or is irrelevant to the others. Here are some examples:

a. appealing repulsive desirable lovable

b. nervous anxious calm desperate

c. unnecessary surplus vital superfluous

In addition to identifying the outsider, the word that does not belong, students can explain what the other three words have in common.

Synonyms and Antonyms

A simple exercise that makes use of word relationships is the Synonym-Antonym T. A target word appears at the top of a list of words, with a mixture of synonyms and antonyms given beneath the target word. To the right is a diagram in the shape of a letter "T," with the left side labeled synonyms and the right side labeled antonyms. Students enter each word in the proper column, as in this example:

resist

agree	join
defy	oppose
forego	prevail against
give in	refuse
withstand	go along with

Synonyms	Antonyms

Students should be encouraged to use their dictionaries to verify word meanings.

Shades of Meaning

As a thesaurus will show, there are fine shades of meaning between many words that may be classified as synonyms. As we become more adept at using words, we learn to be aware of these gradations of meaning. For example, truth and lie would be antonyms, but how would fib and myth relate to truth and lie? We could arrange these words in a column such as this:

_____ truth

_____ lie

_____ fib

_____ myth

If we assign the value of 1 to the word truth, then the word lie would be assigned a value of 4 to show that it lies farthest in the opposite direction. However, what value would we apply to fib? Since it is closer in meaning to the word lie, we would assign it a 3. Then the word myth, which at least does not express a deliberate falsehood, would be closer to truth and would be numbered 2. Other examples are given here:

_____ calm	_____ insane
_____ excited	_____ confident
__1__ frenzied	__1__ poised
_____ tranquil	_____ nervous

Lesson 6. Word Structure

At the beginning of this course we discussed word structure as a vocabulary skill for independence. That is, if we know some basic word structures, we can figure out the meanings of words, sometimes without using a dictionary. Our first inclination will probably be to use context. If that doesn't work, we may try to use word structure.

When we speak of word structure, we mean the combination of roots and affixes that provide the components of most polysyllabic words. Prefixes and roots are especially important because they affect the meaning of a word; suffixes affect the part of speech and thus the way a word may be used in a sentence. By using context and word structure together, students can learn to unlock the meanings of many difficult words.

A certain number of prefixes and roots are especially valuable because they are frequently used and are stable in meaning. If learners are familiar with the prefixes and roots like those in the

following lists, they will be better able to determine the meanings of thousands of words that contain these structures.

The following prefixes originated to a considerable extent in Latin words. Each prefix is followed in parentheses by its most common meanings; then examples of words using each prefix are given after the colon. A few prefixes (such as the ad- group) exist in several different versions. These are called absorbed prefixes; their spellings adapt to the sound of the consonant at the beginning of the word or root to which they are attached.

Frequently Used Prefixes

ab- (from, away): abduct, abstract

ad-, ac-, af-, ap-, as-, at- (to, toward): advance, accomplish, affect, appear, assume, attract

co-, col-, com-, con-, cor- (together, with): coalesce, collect, compose, confide, correspond

de- (away, down, from): depart, descend, dethrone

dis- (not, the opposite, apart): dislike, dishonest, disassemble

ex-, e- (out of): exterior, extract, emit, eject

in-, il-, im-, ir- (not): incorrect, illegible, improper, irregular

inter- (between): interstate, intercept

mis- (bad, wrong, not): mistake, mispronounce, misunderstand

non- (not; the opposite): nonstop, nonsense

post- (after): postpone, postwar

pre- (before): prepare, preview

re- (again; back): rebuild, replay; rebound, reclaim

sub-, sup- (under): submarine, subconscious, support

super- (above, beyond): supervise, supersonic

trans- (across): transport, transcontinental

un- (not; the opposite): unlock, unfair, unattractive

For more prefixes see page 8 in your eighth-grade *Wordskills*

Frequently Used Roots

Word roots are those parts of English words that originated in other languages, especially Greek and Latin. A root is not a complete English word in its own right; it must always be combined with at least one other word part in order to make sense in English. However, each

root does retain the meaning it had in its original language and thus contributes to the meaning of the English word in which it is used.

The following roots are taken from Latin verbs. Each root is followed in parentheses by the original Latin verb and its meaning; then several examples of English words are given after the colon:

cap-, cept (capere, to take, seize): capture, accept

dic- (dicere, to speak): dictate, predict

duc- (ducere, to lead): conduct, duct

fac- (facere, to make): factory, manufacture

mis-, mit- (mittere, to send, let go): mission, transmit

port- (portare, to carry): portable, import, export

scrib-, scrip- (scribere, to write): scribble, transcribe, script

spec- (spectare, to watch, examine): inspect, spectator

ten-, tain- (tenere, to hold): tenacious, obtain, tenure

For more roots see pages 11 and 12 in your eighth-grade *Wordskills*.

Lesson 7. An Inductive Approach to Word Structure

Edgar Dale and Joseph O'Rourke (1971) suggested an inductive approach to studying word structure. As they pointed out, to effectively present to learners key roots and affixes systematically over a period of time is to significantly strengthen their vocabularies. Instead of giving students the meaning of a certain prefix or root, there is great value in letting them figure it out for themselves, just as we recommend letting them figure out new words from context. Notice how this can work with the root soc- in the following inductive exercise we developed from Dale and O'Rourke's model:

Root Discovery

STEP 1. Present the following word list to your students. All words are built on the root soc-, from the Latin sociare, "to join."

social	sociology	socialism	disassociate	sociable
society	antisocial	association	socialization	unsociable

STEP 2. Say the words and ask students to pronounce them. Then write a few of the words on the board in sentences.

1. As a sociable person, Marta enjoys parties.
2. The Kiwanis Club is an association of citizens who seek to improve their communities.
3. Mature people think not only of what they want but of what is good for society.

STEP 3. Give the class a sentence such as the following:

The words sociable, association, and society all have something to do with

____ a) fish ____ b) writing ____ c) groups ____ d) school.

STEP 4. Check understanding by presenting an exercise such as this:

The words sociable, association, and society have the same ____ a) prefix ____ b) root ____ c) suffix. This common word part has something to do with ____ a) fish ____ b) writing ____ c) groups d) school. The word part these words have in common is ____ a) -ize ____ b) -al ____ c) soc- ____ d) dis-

STEP 5. Ask students to return to the list in Step 1 and underline the root of each word. You might also ask them to define each word in the list, using their knowledge of soc-.

Notice how Step 2 encourages the student to combine context and structure—a realistic reflection of how the reading process works. In Step 4 the learner is asked to distinguish prefix, root, and suffix. While some teachers like to have their students recognize the differences between prefix, root, and suffix, others do not think those distinctions are significant as long as students know the meaning of the structure.

Combining Word Structure and Context

There are several ways to have students work with words and review word structures. One approach is to distinguish between two prefixes with opposite meanings, as in the following example:

Add either pre- or post- to each of the following words. (Some words can take either prefix.) Check your dictionary whenever necessary. Then write a sentence containing each word.

____ determine ____ game

____ judge ____ heat

____ election ____ war

Have Students Create Their Own Words

Some years ago Rich Hall wrote a book on sniglets. He defined a sniglet as "any word that doesn't appear in the dictionary but should." Many sniglets were created from authentic prefixes and roots and could be words we actually use.

In an article entitled "Sniglets: Give a Twist to Teenage and Adult Vocabulary," Rhonda Atkinson and Debbie Longman describe how these entertaining words can be used to reinforce vocabulary study. For example, if students have studied the meanings of magnus and phobia, then a word such as magniphobia could be devised for review. From their knowledge of the roots, students should be able to tell that it means "an apprehension that something appearing in the side mirror of your car is a lot closer than it seems." Here are a few more examples from the article by Atkinson and Longman:

cinemuck -(1) movies with an X rating
(2) the accumulation of soda, popcorn, and candy on the theater floor after a movie is over

zapaphobia - fear of being struck by lightning

nonlateralpict - a picture that hangs crooked on the wall

After you create a few sniglets, have students try their hands at it. If the goal is to have them practice specific word structures, it may be best to provide a list of roots and prefixes (and perhaps suffixes) for them to choose from. Of course, we must allow some latitude in interpreting these words because some sniglets may be subject to more than one meaning. Students can decide how narrowly they want their words to be defined.

Similes

Similes are comparisons using words such as like or as: "The children look like little angels" or "Jeff's car is as big as a bus." Similes can be used to reinforce words because they lead the learner to compare a word with something else. Such comparisons can be effective teachers. For example, students can provide words to complete each of the following comparisons that will help them review each of the underlined target words:

The dog's hair shed like _____.

Ed was as quick to react as _____.

The sunspot looked like _____.

Tom stood as _____ as a constable

The boy who took the money looked as _____ as a suspect

Since a number of intermediate language-arts programs include the study of similes, this can be a useful exercise and an easy one to create.

What we haven't presented in this discussion of reinforcement activities is the usual array of exercises devoted to synonyms and antonyms, which can be set up as lists or in multiple-choice or fill-in-the-blank formats. Although these may not be as imaginative as some of the other ideas presented in this manual, they can have their place in vocabulary learning.

IV. ELABORATION

Earlier we saw how important it is to give students a number of exposures to vocabulary if they are to remember the words we want to teach them. How many exposures does it take? Behavioral psychologists of the 1950s and 1960s suggested that learners need ten to twenty exposures to a lexical item, and perhaps even more in some cases. Much would depend on the verbal ability of the learner as well as the difficulty of the lexical item and the concept it represents. In any case, these early learning experts suggested that real vocabulary learning required a lot of review.

But on the subject of vocabulary review there is also good news. Cognitive psychologists, who came into their own in the 1970s and 1980s, as well as more recent learning theorists who have been influenced by them, agreed with the behavioralists that review is very important in human learning. However, in learning lexical items more recent psychologists have tended to be interested not only in the quantity of exposures to those items to be learned, but in the quality of those exposures as well (e.g. Pressley et. al., 1987; Stahl, 1986). To apply some of their findings to vocabulary memory and review: If we create review activities that are cognitively richer, we can get by with fewer exposures. This is one of the most exciting developments in the history of vocabulary study and vocabulary-teaching methodology.

Long-Term Memory and Short-Term Memory

Instead of learners' drilling on definitions or synonyms to review words, learning theorists today tend to suggest, for example, that learners be taught to imagize or picture a target word or picture a situation that the word applies to, summon examples of that target word, or use the word in a sentence. Becoming actively involved in a word in this way helps make a word one's own. Craik and Lockhart (1972) proposed that we think of practice and retention in terms of processing; the more deeply an item to be learned is processed, the more likely it will be retained.

These researchers would distinguish between the way a person remembers something for only a short time, for example, the number of the room in which a class meets, and the way one remembers something for the longer term. The type of review a person engages in for remembering something only briefly they would label maintenance practice; it could involve repeating the room number over to oneself again and again until one found the right room. Review designed to achieve long-term memory is called elaborative practice and requires deeper

levels of cognitive processing. For example, applying the word to one's own life and experiences and to the world in general. Considerable research has substantiated the superiority of elaborative processing in verbal learning, including word study.

For teachers interested in the psychology of learning and review, the concept of levels of process has a fascinating history, with various learning theorists contributing to and modifying the hypothesis. In his encoding specificity hypothesis, Tulving (1978) proposed that one's ability to retrieve material from memory depends in part on the similarity of the rehearsal activity to the situation in which the learner must retrieve what she has been processing. The distinctiveness theory (Jacoby and Craik, 1979) emphasizes distinctiveness of the encoding activity, with focus more on what the learner does with the material to be learned than on the nature of the material itself. Decision theory characterizes elaboration in terms of decisions involved in learning an item, viewed in terms of number of decisions required or in the depth of the decisions required for optimal retention. Still others have emphasized the power of generation effects. That is, verbal material generated by a learner facilitates learning significantly more than ready-made material supplied to the learner. For example, two Canadian researchers found that subjects in an experiment required to learn a list of synonyms retained those synonyms more effectively when the subjects themselves were required to supply the synonym from cues—than when the synonym itself was provided for them by the experimenter (Slamecka and Graf, 1976). What we create for ourselves in our learning apparently works more effectively than ready-made material someone else presents us to review.

What levels-of-processing research tells us is that vocabulary study will be more productive if learners are actively involved with the words they are learning. The more active the learner, the more he retains. In her summary of research on effective vocabulary learning, Karen Mezynski (1983) identified three teaching factors that seemed to facilitate effective vocabulary study, one of which was "the degree to which active processing is encouraged." After the student has learned the definition, she may experiment with it in different situations, or contexts, that seem to fit that word. It is not enough to simply drill on definitions and synonyms.

When we review words with students, we can create situations of various kinds that will spur them on to process the target words more deeply. For example, in reviewing paternalism we might recall an overly protective parent who squeezed toothpaste onto the children's toothbrushes each night, even when they were in high school, or the mayor of a city who tells the citizens not to

ask questions but just let him take care of civic business for them. In reviewing assertive we might, in addition to learning the definition, think about an assertive person we know or have encountered: a judge, a used-car salesperson, a politician who makes grandiose promises in hopes of winning votes. Even better, we might encourage the children we teach to give such examples. In so doing we lead our students into elaborative processing and learning that is more engaging.

Elaborative practice capitalizes on the many possible connections that can be made between learners and what they are trying to remember. Although elaborative practice calls for more analysis than maintenance practice and is carried out at a deeper level, it is by no means limited to older or more gifted students. Elaborative practice techniques can be used at nearly any level of maturity or educational development, from kindergarten through adult.

Characteristics of Elaborative Practice

Elaborative practice typically exhibits several characteristics that we can incorporate into vocabulary teaching:

distinctiveness

decision-making

generation of material

Research continues, of course, on what constitutes effective practice.

Distinctiveness. Imagine if the principal came to school tomorrow dressed as a clown, complete with pointed hat. A year later, you and your students might not remember anything else that happened that week, but you would probably remember the day the principal came to school dressed as a clown. Distinctiveness theory involves things that are more complex than remembering the day the principal came to school dressed as a clown. Even so, that example captures some of the qualities of distinctiveness and gives us some insight into how people learn. If something is distinctive, we tend to remember it because it is surprising, contrary to expectation, or dramatic.

Decision-making. The decisions we make about something determine how well we remember that item. Some researchers have argued that the number of decisions we make is the crucial factor. Others have argued that the difficulty level of those decisions makes the difference. If we look back through our own lives, we will probably find that some of the times we remember best are the times when we had to make significant decisions. Perhaps this is one reason why counselors, clergy, business leaders, advertisers, and salespeople emphasize the importance of the

decisions we make.

Generation of material. In his taxonomy for comprehension, Benjamin Bloom proposed that "doing something" with what we have learned is indeed a higher-level comprehension skill, suggesting that more in-depth learning is taking place (1956). In fact, synthesis is one of the most powerful levels of learning in his taxonomy. Similarly, other researchers found that subjects in their experiments retained information much better when they produced something in the process of learning. For example, if subjects were expected to remember a pair of words such as rapid-fast, it was more effective to have them participate in the task by completing one of the words (rapid-f___, for example) than by giving them a pair of words that were already complete (Slamecka and Graf, 1978). This research offers strong support to a "learning-by-doing" approach to learning, with many implications for teaching vocabulary.

Applying These Principles in the Classroom

How can we apply these findings about memory to the way we teach vocabulary in school? Let's consider one experiment done at Vanderbilt University by psychologist Kathleen Nitsch (1977), who asked two groups of university-level students to learn a list of nonsense words. The first group was given only the definition of each word, but the second group was given both the definition and an example of each word in use. Which group remembered the list of words better? The second group, which was given both definitions and examples. This apparently lends support to the value of elaborative rehearsal. This research seems to tell us that students will learn words better if we don't simply drill them on definitions and synonyms, but give them examples to show how each word is used in context. Designing instruction so that learners encounter a target word in various contexts can closely resemble the way language-users naturally acquire word meanings through using language (Carroll 1964).

Examples are easy to use in the classroom. If we want to review the word magnificent, for example, we might set it up this way (orally or on the board or on paper). Students are asked whether or not each item provides an example of something that illustrates the meaning of the target word:

magnificent

____ 1. a beautiful sunset

____ 2. a bear rummaging in a dump

____ 3. a great medieval cathedral

It's not likely that anyone would suggest that the second item is magnificent (except another bear, perhaps), but most people would agree that the other two examples are valid. Why is this process of reviewing magnificent an example of elaborative practice? Because learners, in order to answer this question, must know more than the definition of the target word magnificent. They must also make a decision about whether or not each situation actually represents the meaning of the word and must think it through even if each decision takes only a second. In making these decisions, most people will also form mental pictures of each item, helping to make the word distinctive (although the extent to which learners rely on visualization will differ in each case).

Notice that in the examples relating to the word magnificent there are two responses that are valid. How many of the responses should provide good examples of the meaning of the target word? This should vary from item to item so that thinking doesn't stop as soon as students have figured out "the right answer." It also gives an opportunity to see the word in different contexts and, in some cases, with different meanings.

Here are some more exercises that use examples to review target words.

metropolitan

____ 1. Death Valley, California

____ 2. What Cheer, Iowa

____ 3. New York City

detection

____ 1. Clare suspects that her home has been robbed and then discovers the robber.

____ 2. Bill cannot find his glasses and assumes that there must have been a robber in the house.

____ 3. Waldo installs a burglar alarm in his house.

revolution

____ 1. a flywheel turning

____ 2. American rebellion against Great Britain

____ 3. movement of the earth on its axis

In the first item, #3 would be an example of metropolitan. In the second item, #1 would illustrate detection. In the third item, each of the three examples illustrates a particular aspect of the various meanings of revolution. Remember, examples are not definitions; rather, they are specific

instances of a word or concept in the real word.

Example exercises can take many forms. They can even fit into a theme, if you like. The following exercise on clichés gives three words in the left column and three rather trite examples in the right column. Students are asked to match each word with the cliché that illustrates it:

____ 1. genuine a. The wolf is at the door.

____ 2. typical b. The real thing.

____ 3. poverty c. When you've seen one, you've seen them all.

The next exercise asks students to match target words with fictional advertisements that illustrate the words:

unaccountable hazard character

____ 1. Kids who have a Harmony Piano in the home develop a sense of discipline, honesty, and leadership ability.

____ 2. Why does everyone love Mystery Mints? No one knows for sure.

____ 3. Tire blowouts can be serious. Don't take a chance on having an accident. Buy ....

Still another way to use examples is to use fictionalized book titles. Students are asked to match each target word with the book title that seems to illustrate it:

mutiny mute suspense

____ 1. *A Ship's Revolt*

____ 2. *Tales of Adventure*

____ 3. *Those Who Do Not Speak*

Another way to use examples in reviewing vocabulary is by having learners match target words with examples or situations that illustrate each word.

obstinate polyglot lyric

____ 1. Words so beautiful that they should be set to music.

____ 2. Maria is fluent in four languages.

____ 3. The mule refused to get up.

Examples can also appear in true-false statements if the teacher casts each item as a situation or fact related to the target word, much like a true-false quiz:

True or false?

____ 1. A <u>metropolitan</u> area has few buildings.

____ 2. Filters remove impurities from motor oil.

____ 3. A sunset is invariable.

As with the other example formats, learners must do more than simply summon the definition of the target word.

A variation of these exercises asks students to list both examples and non-examples in response to a target word. Just as we can learn a new word by relating it to synonyms and antonyms, so we can deepen our knowledge of that word by giving examples and non-examples, as Dorothy Frayer (1969) suggested in her research. See the following activity involving characteristics and examples of a word for the target word wildlife.

Learning a Word by its Characteristics and Examples

characteristics	non-characteristics
live apart from humans	not raised by humans
generally fear people	not kept as pets
cycle of life and death	not named

WILDLIFE

examples	non-examples
bear	dairy cattle
beaver	cocker spaniels
rabbit	chickens
hawks	canaries

Sometimes students will not agree on whether or not an example truly fits a target word. Sometimes the whole class might find itself puzzling through an ambiguous example. This kind of discussion about words might become frustrating to the teacher who seeks closure. But such discussion and disagreement is actually helpful from a vocabulary-teaching perspective because it forces the whole class to think more deeply about the word as well as the situation under discussion.

Examples have the benefit of being concrete, so they tend to appeal to learners while helping them better remember the concept. Examples are almost certain to make word study more exciting, and learners of almost any age respond well to them.

As our students become more accustomed to working with examples and exercises we create, they also become better able to create examples of their own with target words they are

learning. Research by Gipe (1980) with elementary students indicates that learners' generating their own examples tended to result in long-term vocabulary learning. Generating one's own examples or instances of what one reads is something mature readers tend to do, a process we can nurture by using examples for reviewing target words.

Think about your own classroom situation. Which of the examples presented above are most promising? What other kinds of examples might you use? What strong or weak points do you see in using examples?

Lesson 9. Analogies; Mental Imagery

You have probably encountered the Miller Analogies Test as part of applications for various programs, including graduate school. This test is based on the assumption that analogies are a good measure of a person's thinking skills. Outside a test situation, analogies can be used effectively to build thinking skills and emphasize different kinds of relationships. They provide another tool we can use at the elaborative level for teaching vocabulary, as you see in the following example designed to review the word aviator.

Driver is to car as aviator is to airplane.

The colon can be used to represent the words "is to," and the double colon represents "as." You see this in the following example, which asks the student to pick the pair of words that completes the analogy:

child : adult :: _____ : _____

(a) big : little

(b) horse : zebra

(c) kitten : cat

(d) hand : carry

Practice with analogies can be helpful in another way: for high-school students preparing to take college entrance exams. These exams often contain analogies, and the more practice students have, the better they will be able to work with them. However, we should not think of analogies as limited to older students or the college-bound. In fact, the authors have worked with some first-grade teachers who became very much interested in analogies for primary-grade children. These teachers composed some analogies of their own and tried them out in their classes as vocabulary builders; they found that analogies worked very well with average students as well as with those who were above average. Here is one example:

tail bright creek tree laugh

1. Waves are to water as leaves are to _____.
2. Sad is to cry as happy is to _____.
3. First is to head as last is to _____.
4. Night is to dark as day is to _____.
5. Big is to river as little is to _____.

(This exercise was created by Kathy Mackner of Sisseton, South Dakota.)

The next example is a more advanced exercise that was used with tenth-grade students. They were asked to match the first pair of items with one of the five pairs that follow to make a complete analogy. Target words can be placed in the first pair or in any of the other pairs, and more than one target word can be reviewed in the same analogy.

Directions: In the space at the end of each example, write the letter of the pair of words that best expresses a relationship similar to that in the original pair.

AVARICIOUS : generous ::	(A) vicious : fierce	
(B) humane : honorable	(C) profane : crude	
(D) greedy : unselfish	(E) crafty : cunning	____
DEPRESS : pedal ::	(A) perform : stage	
(B) increase : inflation	(C) throw : pitcher	
(D) compress : compression	(E) release : brake	____
SALINITY : salt ::	(A) afterthought : impulse	
(B) thinking : action	(C) gold : silver	
(D) chemist : chemistry	(E) insanity : insane	

(from James E. Coomber and Howard D. Peet, *Wordskills 6*. McDougal-Littell, 1991)

A number of analogy relationships can be used:

Relationship	Example
cause : effect	virus : cold
part : whole	finger : hand
action : object	dribble : basketball
item : category	salamander : amphibian
type : characteristic	owl : nocturnal
word : synonym	argue : quarrel

word : antonym	argue : agree
object : material	shoe : leather
product : source	apple : tree
worker : creation	composer : symphony
worker : tool	carpenter : hammer

If this large number of options makes the possibility of using analogies seem overly complicated, remember that any analogy work you do will help learners develop more sophisticated thinking patterns. These verbal exercises can also help to reinforce vocabulary.

For your own practice, take any group of words and create some analogies. Use any words you like and any format you prefer. Remember that your students might not be familiar with analogies, so start with simple, obvious examples.

Mental Imagery

As teachers, we can't help but wonder from time to time what accounts for the difference between good learners and students who don't seem to learn well at all. Surely we are aware of the various psychological and environmental factors that shape each of us and the children we teach, but there are even more complex influences at work. Each of us has known children who came from seemingly hopeless circumstances and yet succeeded. Unfortunately we also see the opposite.

These questions have fascinated learning theorist Alan Paivio. Subjects he was working with were college and university students who were presumably reasonably effective learners. What factors, he wondered, caused some to perform better academically than others? His research pointed to one particularly potent factor. Good learners consistently created mental images—pictures in their minds—of what it was they were learning. If they were reading about the Boston Tea Party, for example, they evidently pictured the ships moored in the harbor, containers of tea, and angry patriots pitching the tea overboard. In their minds they transformed the historical event into something visual, and good learners were inclined to do that with whatever they read or studied. Paivio hypothesized that memory is composed of two systems, one containing linguistic information and the other containing more non-verbal perceptual information. Invoking both systems in learning, he suggested, can enhance memory for what is learned.

Mental imagery can have powerful implications for our classroom teaching, including

teaching vocabulary. Mental imagery techniques can be taught to children. For teaching word meanings, it is largely a matter of encouraging them to create pictures in their minds so that when they encounter the target word, their minds respond with an image they have come to associate with that word.

The results can be dramatic. According to Anthony D. Fredericks, learners in one elementary school who were "taught to recognize important words, developmental images from them, discuss questions, and do oral reading exercises to verify their images "registered gains in reading comprehension that were three times greater than those who had not participated in the program (1986). If mental imagery can boost comprehension so dramatically, it should also work well for remembering specific words, as a number of teachers have discovered.

In an article entitled "Mental Imagery Activities to Improve Comprehension," Fredericks suggests a sequence of four stages that helps students establish the habit of creating images as they read or as they study words.

1. Make images from objects they see. Ask children to look at a concrete object, close their eyes and picture it in their minds(including characteristics such as size and color), and then open their eyes and compare their images with the object itself. Concrete objects might include simple things like a key or a stuffed animal or perhaps a simple photo.
2. Make images from unseen objects. Ask children to picture something outside the room, perhaps something at home. When they get home that day, they should look at those objects and compare them with their mental images. At school the next day they should describe the object and relate their image of that object to the class.
3. Make images from high-imagery stories. Read stories that are rich in imagery and that students have not heard or read before. Stop occasionally to ask them to describe their images. An extension of this activity might be for students to draw pictures for the story.
4. Make images as they read stories. Encourage students to develop images as they read silently. Some questions about the stories might focus on mental images. Students could also read a play and discuss what scenery might be appropriate if they were to stage it.

Fredericks reminds teachers that there are no "right" images and that they should expect wide variations of images from their students. It is important to allow children plenty of time to create their images and then discuss them with the teacher and the class.

Using mental imagery in this way can also enhance vocabulary study. Children might discuss what pictures come to mind when they read or hear words. Imagine the mental images they might share for malevolent, shrewd, nocturnal, aristocratic, or surly! They might also discuss the things they associate with words such as lethargy, hospitable, or cooperation. If they can associate these words with certain people, places, objects, or experiences, they will be using a strategy that has helped many other people remember words.

Still another imaging possibility is called motor imaging, or acting out words. Research shows that role-playing and other means of dramatizing concepts significantly helps learners remember those words and the concepts behind them. Imagine, for example, some ways in which children might act out some of the words in the previous paragraph: hospitable, lethargy, cooperation, or stingy. The most obvious way would be to portray people who are exhibiting each of these behaviors or characteristics. Simple gestures might also work to communicate a word's meaning. We might start with the baseball umpire's lateral gesture to safe. What kind of gesture might we use for correct? Perhaps two hands help together, with fingers matching? For hospitable we might hold out our arms with palms facing upward as if to embrace someone. For transport we might walk with both hands extended but held parallel to the floor, with palms facing up, as if to carry something. As with mental images, there are no single "correct" answers; the important thing is for children to think about the way they might portray each word according to its meaning.

Try this out for yourself. Write five words that you expect to teach to your class soon. Which words have the greatest potential for creating images? What are some teaching techniques you might use to help learners create meaningful images?

V. REVIEWING WORDS VIA LEARNERS CREATING CONTEXTS

Having learners create contextual material might be considered a next step beyond elaboration, or even another aspect of elaboration. The difference is that in this step students create their own contexts by generating verbal material, generally in writing. They use target words in a context that they themselves create. An old example of this technique would be using a new word in a sentence. Although that strategy might be overused, it is one that is supported by research (e.g. Carr, Bigler, and Morningstar, 1991).

In their review of the limited amount of vocabulary research on this question, Klesius and Searles (1990) found that writing activities seemed to have a positive effect on vocabulary development at all ages between grade one and college. Several studies they reviewed indicated that one reason for the effectiveness of writing as a vocabulary activity might be its reliance on image as the writer presumably visualizes what she is writing about.

The power of writing as a means of learning was well articulated more than two decades ago by Janet Emig (1977). Drawing on the research of scholars such as Luria and Vygotsky, she contended that writing is one of the most effective means of learning, more valuable for learning than speaking. This is because writing requires significantly more active involvement than speaking does and also activates powerful cognitive processes. As writers assign meaning to information they are taking in through writing, they apparently integrate new learning into their prior knowledge and experience, enhancing their potential for applying what they are learning.

Several reasons for the power of writing as a means of learning seem applicable from Emig's findings to vocabulary teaching. First, when students write, they must provide meaningful contexts for the words they are learning; this should encourage them to reflect on past experiences. Second, the use of target words in writing calls for processing the words at higher cognitive levels, enhancing the likelihood of retention more than would be the case if learners simply memorized lists of definitions, synonyms, and antonyms. Third, writing is a slower process than speaking or merely thinking about a word and therefore increases the likelihood that students will think in some depth about target words and will acquire them as part of long-term memory. In fact, research by Coomber, Ramstad, and Sheets (1986) supports that point. Subjects were given the definitions of ten synthetic words; some subjects reviewed the target words through definitions, some through examples, and others by using each target word in a meaningful sentence. The best retention of word meanings was registered by subjects who reviewed by using

each target word in a sentence. The CVS strategy for vocabulary-learning developed by Carr, Bigler, and Morningstar (1991) also supports the power of writing in word study and gives a practical, effective strategy.

Lesson 10. Helping Students Devise Their Own Strategies

Using Target Words in Sentences

An old but reliable teaching strategy requires students to use a target word in a sentence, as in the following examples (with each target word underlined):

> If you heard that a hurricane was coming, what would be your most urgent need?
>
> What might be your destination if you took a flight headed west from San Diego?
>
> Name the person you feel has come closest to transforming the world.

Although these could be topics for paragraph assignments or even essays, a simple sentence response would be sufficient for helping students take advantage of writing as a means of learning in vocabulary development. One thing we have asked our students to do is to underline each target word so that they don't forget to use it in the sentence. Notice, too, that each of the preceding three examples refers to students as individuals and to thoughts or experiences they might personally have had. If we relate many of these words to the learners themselves, they are more likely to appropriate these words, mixing the new words with their own experiences and hence retaining those words.

Quotations

When studying vocabulary, students sometimes respond well to quotations that contain the target word they are studying. They might try to paraphrase, explain, or argue with the quotation, as in the following items (with target words underlined):

> There is no means by which men so powerfully elude their ignorance, disguise it from themselves and others as by words.
>
> —Gamaliel Bradford

Students might elaborate on Bradford's quotation, suggesting specific ways in which people use words to disguise ignorance. The following quotation by George Sand also forces them to focus on a target word, obstacles, within a quotation and then make a comment on the human condition: "Superioritiy has to face so many obstacles . . . ." We might ask students to specify things they consider obstacles to superiority. We might also ask them to define superiority.

If you would like to use quotations to help teach vocabulary, many resources are available

in most libraries. There are several dictionaries of quotations, including the well-known one by Bartlett. Most of these dictionaries are indexed by word so that anyone seeking a quotation with a certain target word can look it up in the index and often find several possibilities.

Word Histories

When used effectively, word histories can be fascinating and can generate enthusiasm for words. Most libraries have several dictionaries of word histories, or etymological dictionaries, as they are often called. (Etymology is the study of the history of words shown by tracing their development since their earliest recorded occurrence.) In such dictionaries the language background for each word is given, along with a record of changes in its meanings up until the present. Although etymological dictionaries are useful and interesting, you do not have to have one in order to incorporate word history into vocabulary study. Standard desk dictionaries, especially those designed for high-school or college students (such as the *Merriam-Webster Collegiate Dictionary*) include a brief history of most words, although in less detail than you find in etymological dictionaries.

Here are a few words with interesting histories that could become the basis for writing assignments:

> Slogan comes from an Old French word that originally meant "bugle." In what ways are Slogans like bugles?
>
> Restaurant, recreation, and refresh are historically related to "restore." What similarities in meaning do you see?
>
> Judge comes from two Latin words meaning "lay" and "say." How does this relate to a person who acts as a judge?

Studying the histories of some words also provides opportunities for using a collegiate dictionary.

Here are some suggestions for assignments that could be undertaken using a collegiate dictionary:

1. Trace the etymology of any word you choose. Record the word as well as you can in the various languages in which it has appeared. Also record the definition of each of those related words in other languages.
2. List as many English words as you can that appear to be related to the English word you chose from the dictionary. Look for other forms of the word (endow and endowment, for example) as well as other words that share some of the same

structures (as with endow and dowager).

Revising Exercises

One of the challenges of vocabulary teaching is to get students to use new words in their writing. As teachers, we are often disappointed to hear students speak in the same tired expressions they have generally been using—when we know that they have learned a wider variety of words and could do better.

One exercise that helps students apply their knowledge of vocabulary is the "Copy Editor" below. Students are given wordy passages and a list of words—ideally, target words they have been recently taught—that can help them revise those passages to make them both more concise and precise:

Word list: margin, bolster, fertile

1. Everyone at some time needs the support of somebody. Usually the somebody is someone who is not only known well but is also someone who can be trusted and who will be empathetic and sympathetic.
2. In the tropical regions of the world the growth of plants, trees, shrubbery, and grass is beyond belief.
3. The difference between the cost and the selling price of an item is always of great importance to a businessperson. This area determines the mark of success each business will achieve.

The "Copy Editor" helps prove a point we sometimes make with our students: It you strive to use the right word, you can often use fewer words.

The following sentences contain hackneyed or vague words. Students can revise them for greater clarity and precision by replacing the underlined word with a more specific word:

The movie was a comedy. It was <u>fun</u>.

The movie was about some people who were chased by bad guys. It was <u>fun</u>.

The book told how astronauts went to the moon. It was <u>nice</u>.

We saw a <u>big</u> whale.

For more extensive practice we might give learners an entire paragraph to revise, perhaps also giving them words to use in revision:

amazing exciting raced slid pool enjoyable

I had a lot of fun at the amusement part. They had a bunch of real cool rides and stuff. This one ride was so cool I couldn't believe it! It was like a roller coaster but it turned upside down when it got to the top! Then when it got to the bottom it slammed into a bunch of water. That was the coolest of all because we got soaking wet.

drove traveled visited enjoy dislike variety

On vacation we went to see my aunt and uncle. We stayed with them one night. While we were there we went to the mall. I didn't like it. It was just like every other mall. The next day we left and went to another town. We stayed there one night. While we were there, we went to an amusement park. It was fun. They had a lot of different rides. Then came the best part. We went to the beach. It was fun. Then we came home.

Vocabulary activities that call on learners to create contexts and become actively involved in building their vocabularies result in better learning and retention. Furthermore, as children become actively involved, they are likely to enjoy vocabulary study more, for they can relate words to their lives and their interests.

VI. SUMMARY

The research on vocabulary learning is clear on at least one point: While indirect vocabulary instruction, such as wide reading, is helpful, even necessary for building a sense of context, learners clearly benefit from direct instruction. For a word to become part of a learner's lexicon, it is necessary to encounter that word a number of times, preferably in a number of contexts. So we need to review at least some of the words we want our students to learn and remember. When we provide meaningful review of target words, we can be sure we are helping learners build strong vocabularies.

Research also appears to be clear on another point: The most productive vocabulary-learning activities are the most active cognitively; these are the activities that involve learners the most. While sheer drill might increase a student's performance on a vocabulary quiz, more cognitively stimulating word study activities are also likely to make a difference on tests of comprehension, a fact convincingly demonstrated with high school students in a study by Dole, Sloan, and Trathen (1995).

Two issues in teaching vocabulary need to be mentioned at least in passing: how to choose target words and how to strengthen the vocabularies of poor readers.

CHOOSING TARGET WORDS FOR VOCABULARY STUDY

With hundreds of thousands of words and other lexical items in the English language, we could be baffled by how much there is to be taught or how much our students need to learn. What if we would look at a reading lesson and identify forty words that many of our students should learn?

It might help us to go back to an earlier part of this book and think about 1) what words are most likely to "stick" after we have worked with them with our students and 2) how many words our students can be realistically expected to learn, given the fact that learners need a great deal of exposure to those words and experiences with those words in different contexts to remember them.

Every week the students in the fifth grade of one Minnesota school district were given a list of thirty or forty words that had come from stories in their basal reader. They were expected to learn the definition and spelling of each word. Children were divided into teams of three to work on the words together. Each Friday the teachers had a word activity of some sort, a contest in which the groups in the class competed to spell and define the target words. At the end of the

semester trophies were awarded to the winning teams. Thanks to teacher creativity, the children developed an enthusiasm for these words and seemed to enjoy studying them and competing with each other. That sounds good.

But the lists included many difficult, advanced words, some that even we were unsure of, words like mage, agglutinate, painter (a line used to tie a boat to a dock), sideboard, refutation, and samovar. Why were fifth-graders being expected to learn words like these? We soon found that all classrooms in the school system required these words to be taught and tested as part of the basal reading series that the district had adopted. The words had been taken from stories that the children had read in class. Apparently the decision had been made that any word the students did not know was "fair game" for the spelling-vocabulary list. The teachers were trapped in a vocabulary system chosen by their administrators, but they did a fine job of generating enthusiasm for those words and for word study in general.

One important question was not being asked: Would the students be likely to encounter that word in their reading? Mage is an archaic term for magician that can't be found in many desk dictionaries. What are the chances that students taught that word will encounter mage in their reading? How likely are they to remember that word, even if they recite its definition in a classroom contest? On the other hand, think of the many words fifth-graders should know or learn as they increasingly encounter more technical and complex vocabulary in their content-area reading. Wouldn't these more common words be better choices to emphasize for fifth-graders? So one important issue centers on teaching words that students are likely to encounter and use.

Another issue is review. To teach a word so that students will remember it means more than simply defining it and doing a quick review several days later, as you know. To teach a word so that students will remember it and make it part of their lexicons is to work with it intensively and creatively in various contexts, relating it to student's lives, finding examples of it, perhaps using it in writing or speaking. There just isn't time to do that with forty words each week. We should not take on more words in a vocabulary program than we can teach intensively. We would do a more effective job of teaching vocabulary if we work meaningfully with ten words rather than superficially with forty.

That means carefully choosing words to stress for word study. We believe there are two basic things to do with a problem word. If that word is one students are likely to encounter and use, we may decide to work on it intensively. If that word is one that is not very common, a word

that students need to know for only one particular story or textbook chapter, we can merely define it for the students so that they can understand its meaning in the context of the assignment they are reading. If after that they forget it, we will not be concerned.

How can we decide whether or not to teach a word intensively? A study by Schumm (1993) indicated that identifying words to teach is more difficult for educators than previously suspected. In this particular study experts in the discipline, i.e. history, instructors, and students were asked to identify the important words of the passage; little consistency was found between the three groups. Armbruster and Nagy (1992) deal with choosing words for teaching in content areas.

Resources for Identifying Words to Teach Intensively

As early as the 1920s reading experts and learning theorists have studied word frequency. More recent sources have been able to take advantage of modern knowledge of linguistics and data collection. John Carroll, Peter Davies, and Barry Richman in their *The American Heritage Word Frequency Book* (1971)list over 87,000 words according to grade levels three through eight. Edgar Dale and Joseph O'Rourke's *The Living Word Vocabulary* (1976) indexes around 43,000 words, indicating for each word the grade level at which most of the students know that word. In their *Basic Reading Vocabularies* (1982) Albert Harris and Milton Jacobson list nearly 10,000 words by grade level and frequency. *Written Vocabulary of Elementary School Pupils, Ages 6-14*, by Smith and Ingersoll (1984), which focused both on the words students wanted to use in their compositions and on their misspellings, was based on an analysis of 484,487 running words (and 10,262 different words).

In comparing the results of their study with earlier studies, Smith and Ingersoll (1984) noted that our constantly-changing English vocabulary results in changes in the words learners use and recognize. This illustrates one of the problems of word-frequency studies. They become dated rather quickly. Yet even the older studies can be useful in helping us determine which words students are likely to encounter and use and which ones should simply be defined for our students and not dealt with further. For example, if agglutinate appears in a story in a basal reader, and we discover in the Dale and O'Rourke book on vocabulary frequency that the word is known by only a small percentage of college seniors, we will probably choose not to spend a lot of time reviewing the word but will simply tell our students that agglutinate means "to stick together."

Five Questions on Choice of Target Words

While word-frequency studies are a valuable guide to choosing words for teaching, other criteria can also help the teacher in making these decisions. If we are to use our vocabulary-teaching time wisely, we should think about why we choose the words for intensive teaching that we do. For each possible word for teaching, we might want to ask these questions:

1. Is this a word students are likely to come across repeatedly?
2. Is this a familiar word with a new meaning, perhaps a specialized meaning, that might prove useful?
3. Is this a word that most students would know only superficially but are likely to need and use?
4. Is this a word that students need to know in order to understand concepts they will soon encounter in their assignments?
5. Is this a word that will help students develop better skills with word structure or provide other opportunities for building word skills?

Applying these questions to the words we might select will increase the likelihood that we will spend our time on words that students will need to know and are likely to encounter. Furthermore, sheer limitations on class time will probably mean that we will not try to teach forty words per week, that our students will be accomplishing a great deal if they learn ten words per week well.

STRENGTHENING THE VOCABULARIES OF POOR READERS

Often one of the challenges of reaching poor readers is to strengthen their vocabularies. As we mentioned earlier, vocabulary is correlated strongly with intelligence as measured by I.Q., with performance in school, and with reading comprehension. Reading experts tend to identify vocabulary as one of the strongest components of reading comprehension. Poor vocabulary might be a cause or a result, or both a cause and a result, of a given student's reading problems. Either way, we know that that student will not be a proficient reader without building a strong vocabulary.

Teaching at-risk students is a complex topic, beyond the scope of this book. But much of what is suggested in this book can help build vocabularies in at-risk students. Following are a few suggestions that might help in adapting effective vocabulary teaching to students who need extensive help.

First, students with poor reading comprehension often have a poor sense of context. This may be in part because their difficulty with word recognition means that they approach a text piecemeal, stalled by many words that they must stop and figure out. The larger the proportion of words a reader has trouble with, the more his sense of context deteriorates. We can experience this for ourselves when we read a text in a language in which we are not very proficient. A student with poor sight vocabulary probably needs instruction in word skills. But along with that she should receive practice in using context, in seeing the words of a passage working together as a whole. Many of the activities in the context chapter of this book could be used to help build that sense of context. The program Buikema and Graves (1993) developed for middle-school students seems especially useful for helping learners develop context skills. Since learning from context tends to be a gradual process (Nagy, Herman, and Anderson, 1985), the best instruction in context will most likely take place over a long period of time, especially for students with weak context skills.

Other students who might need extensive practice with context are second-language students. As they develop their vocabularies in English, they also must increasingly progress from focusing on individual words to relating those individual words to the larger text and to the meanings the author seeks to convey. Practice with context can yield dramatic results.

On the other hand, some poor readers, particularly those with perceptual problems, need help in looking at parts of words and making sense of those. These readers may find it difficult to bring down words into meaningful parts. Intensive work in word structure can be very helpful. Learning some of the major roots and prefixes can give them a fairly reliable strategy for making sense out of word parts. But just the practice of seeking meaning in the parts of words in itself can help them become competent readers.

Furthermore, many at-risk students benefit from learning activities that call for high involvement while not being too complex for them to understand. Most learners enjoy games. Some of the activities at the elaborative level, discussed in Chapter 4, could engage these students to enhance their learning. One reason these activities are potentially engaging is that they might refer to concrete objects and experiences, even encouraging the student to relate what she is learning to her personal experiences. Asking students to respond to possible examples of a target word, or better yet, supplying examples of their own that illustrate target words, can make word study relevant to their lives.

* * * * *

Edgar Dale and Joseph O'Rourke (1971) pointed out that adding words to one's lexicon changes one's view of the world, for the words we know determine in large part what we see, hear, and otherwise respond to. The fact that Eskimos have twenty-some words for snow means not only that they have a larger vocabulary at least in one area of knowledge; it also means that they tend to see more distinctions in snow, and to be aware of many different kinds of snow, than English language-users from, for example, Virginia, whose lives are not as closely intertwined with snow. As we have pointed out, words are labels for concepts. That means that as we teach words, we are helping learners develop their concepts as well as express themselves more effectively—an effective way for us to truly teach for change.

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